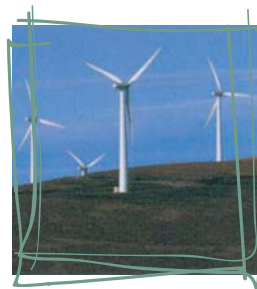


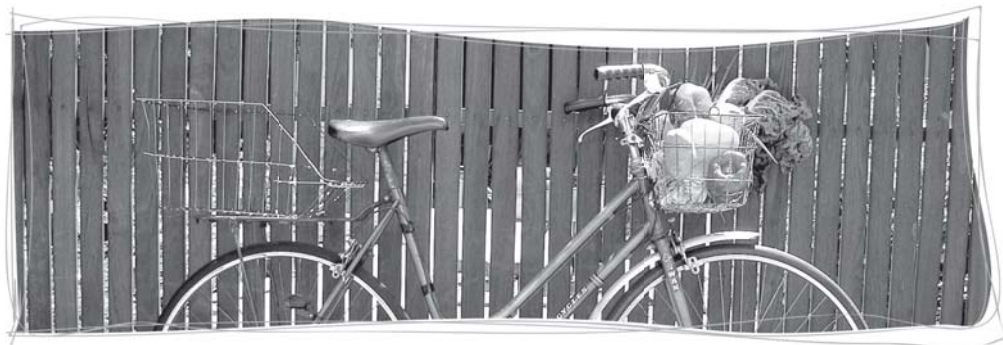


Nobody made a greater mistake than he who did nothing because he could only do a little - e. burke

Living Smart

action guide...
for a sustainable community





welcome to living smart

Welcome to the Living Smart program and congratulations on taking this step towards a sustainable lifestyle and a sustainable community. Living Smart means having a lifestyle that maximises your well-being, health and happiness while making financial sense and reducing your impact on the environment. By Living Smart you will make a difference, to yourself and the planet.

'nobody made a greater mistake than he who did nothing because he could only do a little.' – E.Burke

The Living Smart program was developed in response to an expressed need within the community for an environmental education program that helped people to live more sustainable lifestyles. In tackling sustainability it was felt that issues such as health, well-being and community development need to be covered as well as environmental issues. The first three Living Smart courses ran in 2003 & 2004, as a joint initiative by The Meeting Place Community Centre, the City of Fremantle, Murdoch University and the Southern Metropolitan Regional Council.

Living Smart is unique from other environmental education programs in that it does not focus on a single environmental issue but adopts a holistic approach by looking at environment, lifestyle and community. It is also unique because it incorporates the concept of goal setting and the way we think into the program to help you stay focused and motivated.

This program will provide you with the skills to take action in your own home to improve both your quality of life and reduce your environmental impact.

good luck!!!



acknowledgements

Living Smart was developed in a community partnership between The Meeting Place Community Centre (Jan Bayman, Samantha Richardson–Newton); City of Fremantle (Caroline Raphael); Murdoch University (Dr Peter Dingle and PhD Student Lucy Sheehy) and Southern Metropolitan Regional Council (Dr Stephanie Jennings).

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Information contained within this guide is sourced from publicly available information found on the world wide web and other sources. A detailed bibliography is provided at the end of the guide for more information.

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thinking smart, being smart

Goal setting and thinking for life

It is human nature to want to better ourselves, whether that be in career, relationships, health or sport. We often want to accomplish things like learning a new skill, putting in that veggie patch or becoming fit, but we just don't seem to get around to doing it. It might be a lack of time, too many other priorities or just a lack of motivation that stops you. Sound familiar? Well if you want to stop thinking and start acting, then goal setting is a tool that can help you.

Goal setting is about creating realistic, manageable steps towards achieving something you desire. Using goal setting, you can learn to identify what you want out of life, how to achieve it and more importantly you will achieve it. In this chapter, you will learn about the power of goals and how goal setting is an effective tool for helping you create the happy, healthy life you want.

Why should you use goals?

Goals are a natural part of daily life. In fact, you could say that just about everything we do is a goal. You wake up in the morning and you think about what you need to get done: get up, go to work, get the shopping, pick up the kids, go for a run and ring your sister. You may write a list of the things you need to get done today, this week, this year. These are all forms of goal setting; figuring out what you need or want to do and how you are going to do it. Goal setting just takes this thinking and reasoning into a more formal and more effective process.

The most important reason for using goals is because they work.



If you want to achieve something, the most effective way to achieve it is to set a goal. This has been proven in everything from losing weight, to improving relationships, improving diet and fitness levels, improving a company's sales figures, improving an athlete's performance and improving environmental behaviour

Why are goals so effective?

There are a few simple reasons why goals work so well.

They focus you. They make you identify exactly what it is you want, so you no longer have to waste your energy achieving things that aren't important to you.

They commit you. When you set a goal you make a commitment towards achieving it. It is no longer something that you just wish for or that you will get around to later. It is something you are going to do.

They motivate you. Because you have set a goal it will motivate you to do it. You are more likely to put effort and energy into achieving it and the goal will continue to motivate you until you do achieve it.

Seven tips to ensure you achieve your goals

You may have used goals in the past. Did you achieve your goal?

If not, it may be because you didn't set your goal right.

On the following page are some important steps to ensure the success of your goal.



It commits you.

When you make a goal you make a commitment to achieve it.

1. *Write your goal down.*
2. *Make it specific.*
3. *Make it positive.*
4. *Make it challenging.*
5. *Make it measurable.*
6. *Give it a deadline.*
7. *Be flexible.*



1. Write your goal down.

If you don't write it down then it is much easier to forget about it or get distracted. If you write it down and put it in a visible place then you will be continually reminded about your goal. Not to mention you will make a greater commitment to the goal when it is in writing.

2. Make it specific.

You need to know exactly what you are working towards. For example, a goal that says 'I will set up a compost bin to compost all my food and vegetable scraps' is much better than 'I will try and throw less stuff in the bin'. By being specific your goal tells you what to do and what you will achieve.

3. Make it positive and in the present tense.

In this way they are like positive affirmations, you want to reinforce your good behaviours not your bad. Such as, 'I am walking to work three times a week' rather than 'I will not drive so much'.

4. Make it challenging yet achievable.

If a goal is too easy, you won't put in any effort. Make your goal challenging and you will be surprised at what you can achieve. However, it must be realistic, otherwise you are setting yourself up for failure and the feeling of disappointment. For example, 'I am reducing my water consumption by 30%' may be more realistic than 'I am only using 40 litres of water a day'.

5. Make it measurable.

You must be able to measure your progress towards your goals, so that you can tell how close you are to achieving it. As you see yourself making progress you will be continually motivated.

6. Give it a deadline.

This will give you a sense of urgency and stimulate you to put in effort. If you have a deadline you will not be able to put it off until later.

7. Allow your goal to be flexible.

Circumstances often change and you may need to develop new strategies to reach your goal or you may even need to change your goal. This is okay - adapt your goal if you have to but don't abandon it.

Setting your goals

Now that you know what a goal should be like, it's time to think about setting some of your own. There is no need to rush into this, take your time, find somewhere quiet and have a think about what it is you want to achieve. Your goals can be anything you want. They don't have to be major life changes they could just be something you've been meaning to do for a while. Whatever it is, make sure it is something you want to do for yourself. It is important to identify your individual motivation for achieving your goals. Knowing why you want to achieve a certain goal will help keep you going when things start getting tough. For example, your goal may be to save enough money to build your own home, but your motivation for this is to provide a better lifestyle and a more stable and sustainable environment for your children.

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My Simple Living goal

My overall goal and steps to achieve this are:

goal: _____

step 1: _____ ☐

step 2: _____ ☐

step 3: _____ ☐

Why i want to achieve my goal:

I will achieve my goal by:

"the difference between a dream and a goal is the written word"

ANON

When you have decided what it is you want to achieve, think about how you are going to achieve it and when you will achieve it by. When you have a good understanding of your goal, write it down. A successful approach to goal setting is to have short-term, medium-term and long-term goals. Your short-term and medium-term goals will give you steps to reaching your long-term goal. As you achieve your short-term goals, you will be continually motivated and feel more confident about reaching your long-term goal. Make sure your goal is specific, challenging, measurable and has a deadline.

Adjacent is an example of a Living Smart goal setting form for the simple smart living topic.

Maintaining your goals

If you have set your goal but find after a while that you are not achieving it then ask yourself these questions.

1. Why do you want to achieve this goal?

The why is really important, if you don't know why you want to achieve the goal or if its not something you really want (maybe someone else wants it for you) then you will not be motivated to achieve it. You need to sit down and figure out why you want this goal, once that is clear write it down and keep it with your goal as a reminder. Then if you feel your motivation lacking just repeat the why to yourself. If you find out that the goal is not something you want, figure out what you do want and set a goal for that.

2. Does your goal follow the seven tips given in this chapter?

Setting your goal does not mean it is set in stone. Keep working and revising your goal. Can it be more specific to give you greater guidance? Should it be broken down into smaller, more manageable goals? Did you give it a deadline? Was the deadline realistic or does it need to be changed? Was the goal set unrealistically high or was it too easy? If your goal follows our seven tips you will have a greater chance of success. Keep working on your goal to make it the best it can be and you too will do your best. Don't forget our seventh tip, your goal should be flexible!

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8

3. Do you have enough support?

Sometimes we want to keep our goals to ourselves – just in case we don't achieve it. That's understandable, but have you thought about it the other way. If you tell someone about your goal then you will have to achieve it! Telling someone about your goal will not only give you added motivation but will become a source of support, someone to encourage you and praise you as you are making progress. You can even get them to set a goal with you. For example, if your goal is to run three times a week to improve your health, doing it together it will be a lot more fun and will make it seem easier. Or if your goal is to develop your own veggie patch get a whole group of your friends together for a busy bee and have yourselves a party afterwards to say thank you.

Trouble shooting your goals

- *What is your why?*
- *Does it meet the seven rules of goal setting?*
- *Do you have enough support?*
- *Do you need some added incentive?*

4. Do you need some added incentive?

If you still need a bit of extra added motivation think about giving yourself a reward each time you achieve your goal. This works particularly well if you have a number of short-term goals and an overall goal. The little rewards as you achieve your short-term goals will give you added incentive to move towards your long term goal and the reward that will be at the end. Pick a reward that will really mean something to you and will keep you motivated. For example if your goal is to spend the weekend replanting your garden with natives, you may reward yourself by going camping in your favourite spot the following weekend. Tell yourself that you can only do the camping trip once you have achieved the goal.

Goals are important for well being

Goals often overlap each other just as different areas in our lives – relationships, health, sustainability, work performance and family responsibilities all overlap. We often find that when one area improves, there is improvement in another area. Once you start to see positive results, you are often motivated to do more, and when you begin to achieve your goals, you can see endless possibilities for improving your life, which in turn contributes to your overall sense of well being.

In this book, we will use goal setting as a tool to help you make changes to create the sustainable lifestyle that you want. We also encourage you to use goal setting in any other areas of your life you want to improve.

We believe that goal setting works and we hope that you use it to create the happy, healthy lifestyle you want.

If you think you can't do something:

- *Write down the negative messages you hear yourself saying*
- *Write down a much longer list of why you can*





Knowledge is Power

Knowledge is a crucial factor for making changes. You need to know what choices you can make, what options are open to you and the benefit of those options. This book will provide some of the knowledge to help you make effective changes. However, there is a wealth of information out there and it is impossible to include everything in one book. So if you feel you need more information to make a change then make the effort to find out. At the end of each chapter there is a section titled 'Want to find out more?' This section will help to get you started but again we could not list all the possible resources available to you. If you are looking to increase your knowledge on a topic there are three effective approaches you can take.

Use the internet – start with the google search engine, type in a few keywords and see where you end up. www.google.com.au

Use your local library – they usually have heaps of books on all sorts of lifestyle topics, everything from yoga to organic gardening. You can either visit your library or search online. If you have a few libraries close to you then visit www.liswa.wa.gov.au and you can search all public libraries in the state.

Ask someone who will know – this can be anyone from a local expert to friends and family.

want to find out more?

There are many books available on goal setting, personal achievement, positive affirmations etc. have a look around yourself or give one of these a try.

Books

Dingle,P. & Power,T. (In Press) Goal Getting: The Science of Successful Goal Setting

Websites

www.about-goal-setting.com – The 20 min tutorial is good but ignore the ads at the top of the page.

www.topachievement.com/articles – Has a number of articles on successful goal setting.



Simple Smart Living

Sustainability and lifestyle

We must be the change we wish to see in the world – M.K.Ghandi

World leaders, politicians, environmentalists and scientists often use the words sustainability and sustainable development. But what exactly is sustainability, why do we want sustainability and how can we contribute to achieving it?

Despite advances in technology each successive generation uses more and more of the world's limited resources.

What is Sustainability?

It involves rethinking society and realising that economic growth and material wealth is not the same as quality of life. It also recognises that our quality of life is dependent on the health of the environment. However, it is not just about money nor is it just about the environment, but also health, community, equity and justice. Essentially sustainability means that when a decision is made, all three parts of the sustainability trinity: economics, society and environment, need to be considered equally.

Why do we want to achieve Sustainability?

Large scale consumption of resources, land degradation, salinity, pollution, loss of biodiversity, loss of forested areas, climate change, over population, inequality of wealth and inequality of human rights are all issues of today which will remain problems into the future unless action is taken now. All these issues impact on our environment, our health and our happiness and well-being. Sustainability is the first step that we, as individuals, groups and communities, can take to reducing these problems. Sustainability is something to strive for - it is how we want the world to be.

Sustainability is the simultaneous achievement of economic, social and environmental goals so that everyone today and everyone in the future has what they need.

Who is responsible for achieving Sustainability?

Sustainability has often been criticised for being a vague concept that is only played lip service to by big business, industry and government. But sustainability is not just the responsibility of government and industry; it is everybody's responsibility to help achieve sustainability, from government and big business to schools, community groups and individuals. Sustainability can and should be applied in all contexts and at all scales including your home. When you make a decision (i.e. what car to buy, where to go on your holiday, what light globe to install) are you considering all aspects of the sustainability trinity? After all, industry and big business are largely there to supply us with the products and services that we use everyday, including the cars we drive, the clothes we wear, the food we eat and the appliances we use.

Why do we need to act now?

Our studies have asked people what they think is the most important issue facing Australia today and in ten years time. As an important issue of today the environment is always ranked below unemployment, the economy, health and education, but is always rated as the most important issue in ten years time. The remarkable thing is that ten years have passed since these surveys started and still people rate the environment low as an important issue of today but the most important issue of the future. We think the next generation is going to fix it and while each successive generation has more positive environmental attitudes their environmental actions are worse (with the exception of a few people). Despite advances in technology each successive generation uses more and more of the world's limited resources.

We seem to be able to put the environment off into the future, but for how long? When will people start making changes? Hopefully by then it will not be too late! The reality is that the environment is an important issue of today and unless we act now it may be too late to stop or reverse a lot of the damage we have done already. Got the idea? It is time to take responsibility and action now.



83% of Australians said that society today is too materialistic, with too much emphasis on money and not enough on the things that really matter.

23% of Australian adults have voluntarily made a long-term change in their lifestyle (other than retirement), which has resulted in them earning less money.

Some statistics to convince you!

(Australian State of the Environment, 2001)

- Australia still has a net loss of vegetative cover and the rate of land clearance has accelerated.
- In Australia 5.7 million hectares are currently at risk from salinity, this area could increase to 17 million hectares by 2050.
- Water use has increased from 1985 to 1996/7 by 65%
- Most indicators of resource consumption continue to outpace population growth.
- Australia's population is forecast to increase to 23 million by 2021 equivalent to creating one extra city the size of Sydney. The efforts required to meet the natural resource needs of an additional 3.7 million people will be immense.
- There are 1451 species and 27 ecological communities listed as endangered or vulnerable in Australia.
- The level of waste we generate per person is second only to the USA.
- There are an estimated 80, 000 contaminated sites in Australia.
- The average household contributes between 30-50% of all pollution. Nearly 75% of these resources are wasted through inefficiency and lack of awareness.
- Australia's greenhouse gas emissions increased by 16.9% between 1990 and 1998 and we have the highest per capita greenhouse gas emissions in the world.
- Australian consumption of energy in the residential sector has increased by 60% since 1975.



Lifestyle and Consumption

Western lifestyles are characterised by high consumption and high levels of waste. In fact the more we consume and the more things we own, the more we are considered successful by Western standards. Not only does this attitude and behaviour strongly impact on our environment it does not necessarily make us happy and healthy people.

A recent study showed that nearly two thirds of Australians say they cannot afford to buy everything they really need, despite the fact that Australians are richer than ever and about three times better off than their parents in the 1950s. This is because our needs are increasing dramatically; luxury cars, gourmet barbeques, hi-tech entertainment systems and designer clothing are all seen as needs. Australians are bombarded with messages everyday saying that the way to a happy and fulfilling life is to have more money and a higher standard of living. Yet in the same study, 83% of Australians said that society today is too materialistic, with too much emphasis on money and not enough on the things that really matter.

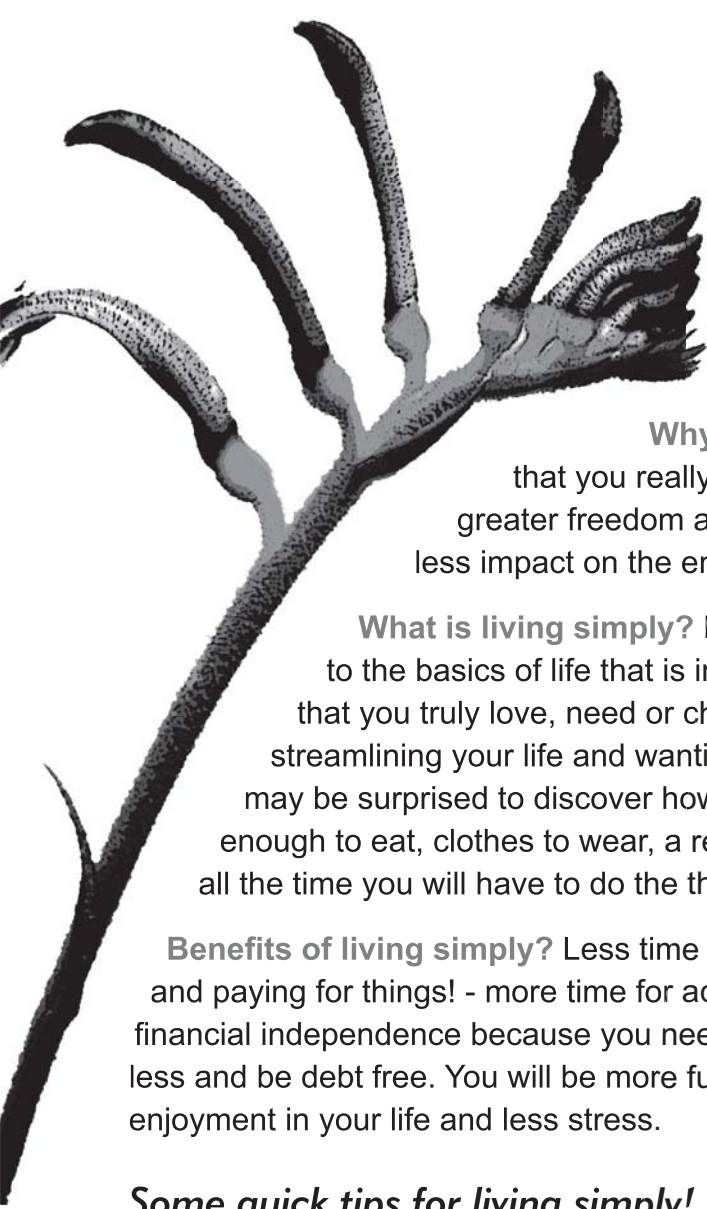
Did you know that research shows unanimously, that people who focus on money and materialistic possessions are less happy and are more prone to negative mind states like depression. And with the exception of very poor people obtaining more money and material possessions does not improve quality of life and in some cases makes it worse. To coin a well used phrase 'no one went to the grave wishing they had more money' but many wished they had had a better life.

Simple Living - a new way of life?

Integrating the concept of simple living into your lifestyle is one way you can take a holistic approach to your individual sustainability. Simplifying your lifestyle can go a long way to making your life happier, healthier, more meaningful and less intrusive on the natural environment. Simplifying your life can be anything from moving to a smaller home, moving from full-time to part-time work, having a garage sale, prioritising your time, cleaning out all your cupboards, paying off your debts and living within your means.

In a recent survey, 23% of Australian adults have voluntarily made a long-term change in their lifestyle (other than retirement), which has resulted in them earning less money. This has been termed downshifting and is becoming an increasing trend both here and overseas. Most people do it to spend more time with family, for more personal fulfillment or for a more balanced healthier lifestyle. Is it worthwhile? According to the survey those that downshifted were overwhelmingly happy with their decisions.

Living simply is getting down to the basics of life that is important to you, the things, people and experiences that you truly love, need or cherish and getting rid of the rest of the clutter.



Why live simply? To have more time to do the things that you really want to do; to be more in control of your life, to have greater freedom and less dependence on material things and to have less impact on the environment.

What is living simply? Essentially the concept of simplifying is getting down to the basics of life that is important to you, the things, people and experiences that you truly love, need or cherish and getting rid of the rest of the clutter. It is streamlining your life and wanting less but it is not the same as having nothing. You may be surprised to discover how much you can do without and still have more than enough to eat, clothes to wear, a reliable car and a comfortable home – not to mention all the time you will have to do the things you want to do.

Benefits of living simply? Less time recording, insuring, cleaning, maintaining, protecting and paying for things! - more time for activities, experiences, people and family. More financial independence because you need less money - you can get a more fulfilling job, work less and be debt free. You will be more fulfilled, happier and healthier because there is more enjoyment in your life and less stress.

Some quick tips for living simply!

- Consider sharing ownership of big items such as lawnmowers and trailers with neighbours, friends and family.
- Whenever you get a new item give away an old one i.e. if you buy a new suit give away some of your older clothes. This forces you to work out whether you really want it.
- Simplify by getting rid of excess stuff, ask these questions about each item; Have I used this recently? How does this help me (remember items can provide an emotional as well as functional purpose i.e. photo albums)? Do I need this item or can I rent or borrow it?
- Avoid compulsive buying, write down the name of the item that you want then wait for a month. If you still want or need it at that time then go ahead.
- Choose the presents you buy for others carefully. Don't buy them something that will never be used and is a waste. Ask them what they want or make your own presents and cards.
- If you are buying something - look for quality and durability as well as standard simple technology that is easy to repair.
- 'Time is better than money' – Make a link between time and costs and ask yourself if it is worth x hours of work to buy it. If you would rather spend those x hours doing something else, then don't buy it.

Want to find out more?

Books

Archer, M. & Beale, B. (2004) *Going Native – Living in the Australian Environment*. Hodder Headline, Sydney.

Commonwealth of Australia (2001) *Australia State of the Environment 2001*. CSIRO Publishing, Canberra.

Ghazi, P. & Jones, J. (2004) *Downshifting: The bestseller guide to happier, simpler living*. Hodder Mobius, Great Britain.

Hamilton, C. & Mail, E. (2003) *Downshifting in Australia: A sea-change in the pursuit of happiness*. The Australia Institute. This can be downloaded from www.tai.org.au/publications

Hamilton, C. (2003) *Growth Fetish*, Allen and Unwin.

Magazines

CSIRO. ECOS: Towards a Sustainable Future. www.publish.csiro.au/ecos

Websites

Visit the State sustainability website of the Department of Premier and Cabinet www.sustainability.dpc.wa.gov.au. Here you will be able to gain access to the states sustainability strategy and a number of sustainability case studies which document West Australian initiatives for sustainability in the areas of; agriculture and conservation, community development, education, energy, house construction, industry and technology, local government, mining, planning and transport, and tourism. As well as a whole heap of other useful information.

Also some interesting websites on simple living

www.simpleliving.net

<http://pages.ivillage.com/twnkrissie>

www.simpleliving.org





Waste Smart

Managing waste better

Why be SMART about waste?

It takes valuable resources to maintain our consumptive lifestyles, by not consuming so much and wasting so much we can save some of these resources for future generations.

Minimising the amount of waste we produce will reduce the need for landfills, which we are rapidly running out of. Landfills are not only unpleasant and unsightly they also emit greenhouse gases, contaminate groundwater and soil and attract vermin which can spread disease.

Our consumptive lifestyles also cost a lot of money. By buying less and making better use of what we do buy we will save ourselves a lot of money.

Did You Know?

- About 280,000 tonnes of paper-derived products are used in WA each year. Much of this could be recycled. Each tonne of recycled paper saves 1 hectare of trees and uses 50% less energy and water to produce.
- Australians use 6 billion plastic bags a year, if these were tied together they would stretch around the world 37 times.
- In 1996/7 it cost \$1256 million dollars to collect and dispose of Australia's waste.
- It is estimated that 7 billion tonnes of solid waste enters the world's oceans annually. Over 100,000 whales, birds, seals and turtles are killed each year worldwide by plastic rubbish.
- Perth throws out about 100,000 tonnes of organic matter each year, all of which could be composted and used in our gardens.
- A variety of hazardous wastes are generated by Australian households, 86% of household use their regular waste collection to dispose of this hazardous material.

In the last 100 years the amount of waste we produce has increased dramatically.

Waste used to be considered a resource, now we don't give a second thought to what we throw in the bin.

Today Vs. the Good Old Days

40 years ago	Today
We consumed less	We consume more
Ate more home grown or fresh produce with little/no packaging	Products have lots of packaging
Food scraps were fed to dogs/ chooks/ garden	Lots of disposable goods ie. tissues rather than hankies
Belongings were repaired rather than thrown away	Easier to buy a new one than fix a broken one
	Convenient service to take rubbish away

The principles of waste management in the home

Reduce, reuse, recycle – The 3R's are a simple guide which can help us minimise our waste. Remember to first reduce, then reuse and then recycle or compost what is left over.

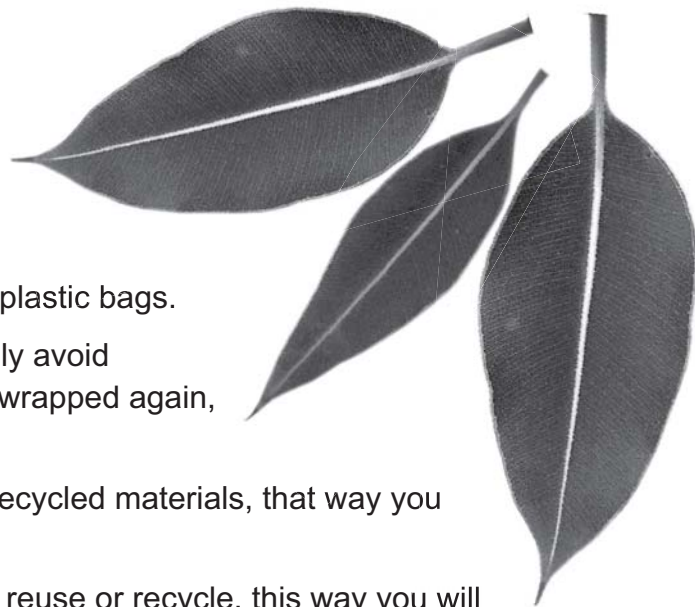
REDUCE – means to buy less rubbish so you have less to get rid of later on. This will save valuable resources as well as your own money as you will be buying less.

- Hire, share or borrow things when possible, rather than buying new ones.
- Make gifts and cards for family and friends rather than buying them.
- Repair clothes, toys, tools and appliances rather than buying new ones.
- Grow your own vegetables, herbs and flowers. This will save on packaging, will save you money and will be healthier for you.
- Proof read your work from the computer before printing a hard copy.

It is estimated that each week the average Australian saves through recycling.

- Over 3kg of greenhouse gases.
- Enough electricity to run a 40W light bulb for 72 hours.
- Air pollution equivalent to 4.5kms of car travel.
- Over 90L of water.
- And 3.6kg of solid waste.

- Double side photocopies when copying multiple pages.
- Make more foods at home rather than buying takeaway or convenience foods.
- When given the choice of drinking bottled drinks or on tap drinks, choose on tap drinks from reusable glasses as this will significantly reduce the use of glass.
- Each year we buy a multitude of cleaning products which come in plastic containers. Reduce the amount of containers your household is buying by making your own environmentally friendly cleaning products. This will save you lots of money every year and will help you create a healthier, toxic free home, see Health Smart Home for some ideas.



When Shopping

- Take a bag or basket with you rather than using plastic bags.
- Buy products that have less packaging, especially avoid products that are individually wrapped and then wrapped again, like cheese slices.
- Buy products that have packaging made out of recycled materials, that way you are supporting the recycling industry.
- Buy products with packaging that you can either reuse or recycle, this way you will be throwing less into your green bin and more in your yellow bin.
- Choose products that come in a concentrated form or have refills.
- Consider buying in bulk. For example a 1kg tomato sauce bottle will use less packaging than two 500g bottles.
- Don't buy disposable or 'one-off' products, such as tissues, paper napkins or disposable wipes. You will find there is probably a reusable alternative, such as a hankie.
- Don't buy cling film or glad wrap it can't be recycled, does not biodegrade and is a harmful pollutant. Use reusable containers or greaseproof paper held in place with a rubber band.
- Avoid products that are packaged on polystyrene trays they can't be recycled and contain CFC's a damaging pollutant.
- Buy your ham and bacon from the deli container wrapped in paper rather than buying it pre-packaged in plastic. You will also find this is usually cheaper and fresher.
- Buy your meat from the butchers, again they use less plastic packaging and more paper.
- Buy fruit and veg from wholesalers or local markets, where you can usually pile it all into a cardboard box.
- Buy products that are durable, last a long time and are easily repaired.
- Buy microfibre cloths for the kitchen, bathroom and dusting. Rather than only lasting a week these can be washed and reused again and again.
- Only buy what you really need, consider whether you need excessive luxury items or whether you can make do with what you've got.
- If you believe something has been excessively packaged, contact the manufacturer (preferably in writing) to express your concern.

Think about it!

Steel can be recycled again and again without reducing the quality of the end product. Every tonne of steel recycled saves 1.5 tonnes of iron ore, 0.5 tonnes of coal and 40% of the water and 75% of the energy it takes to make a tonne of new steel.

REUSE – reusing a waste item means that you don't have to buy a new one for the same purpose. This way it doesn't end up in landfill and also saves money and resources.

- Reuse empty glass jars for jams, sauces and as storage containers for your bits and pieces.
- Reuse scrap paper, junk mail and old envelopes for taking phone messages, leaving notes etc..
- Reuse empty soft drink bottles as water bottles, or as pots for plants and seedlings.
- Cut cereal boxes on an angle and use to store magazines.
- Old stockings can be used for tying plants to stakes or for straining paint.
- If you have too much junk around the house organise a garage sale or donate items to a charity, this allows others to reuse your junk. You never know what could be someone else's treasure.
- Buy second hand books or clothes and complete the reuse cycle.
- Save your old margarine containers, ice cream containers and egg cartons and donate to a local school.
- Blankets, towels, old carpets, general pet accessories such as leashes and collars will be accepted and reused by K9 Dog Rescue, 9581 9005 or visit www.k9dogrescue.com
- In association with non-profit organisations and Optometry Aid Overseas, Laubman and Pank sends used spectacles to Third World countries. Contact 9364 7144 for a nearby drop off point.
- Buy reusable/ rechargeable batteries or recharge your old batteries with the new rechargers that work on all batteries.

Power in your Pocket!

As consumers we have a wealth of power in our pocket. Let manufacturers and retailers know what you value by buying products that have sustainable packaging.

This really does work – after all there are a lot more environmentally sensitive products on the shelf today than there was ten years ago. This is because there are consumers that have supported those products.

Think about it!

Each year Australia produces 50,000 tonnes of soft drink bottles, 30,000 tonnes of milk bottles and more than 10,000 tonnes of detergent and shampoo bottles. This means each Australian consumes over 71kg of plastic every year. Reducing this can be as simple as taking a bottle of water with you rather than buying a drink.

RECYCLE – Recycling means that a product, previously treated as waste, is returned to a factory where it is remade into either a new product or the same one again. What can be recycled differs from council to council as each council has their own recycling system. To make sure you are recycling correctly call your local council or visit their website to find out exactly what you can and can't recycle. Alternatively you can visit Planet Ark's online recycling guide at www.recyclingnearyou.com.au.

Here is some general information about curbside recycling to get you started but please check with your local council as your council may differ to the information below.

Glass.

All clear, green and amber bottles are recyclable. All glass jars are recyclable.

Broken window and windscreen glass, heat-treated glass and laboratory glass aren't recyclable.

Plastics

Plastics coded 4 and 5 are usually not recyclable. Cling-film, bread bags and plastic bags are not recyclable.

Paper

Generally all types of paper and cardboard are recyclable including glossy magazines, newspaper, envelopes and egg cartons.

Thermal fax paper and plastic coated paper bags (i.e. cereal bags) are not recyclable.

Steel cans

Generally all steel cans are recyclable including; food cans, coffee tins, paint tins (clean of paint), bottle tops, jam jar lids and aerosol cans.

Aluminum cans

All aluminium cans are recyclable

Milk and Juice Cartons

All liquid paperboard cartons are now recyclable including; milk, juice and long-life milk cartons.

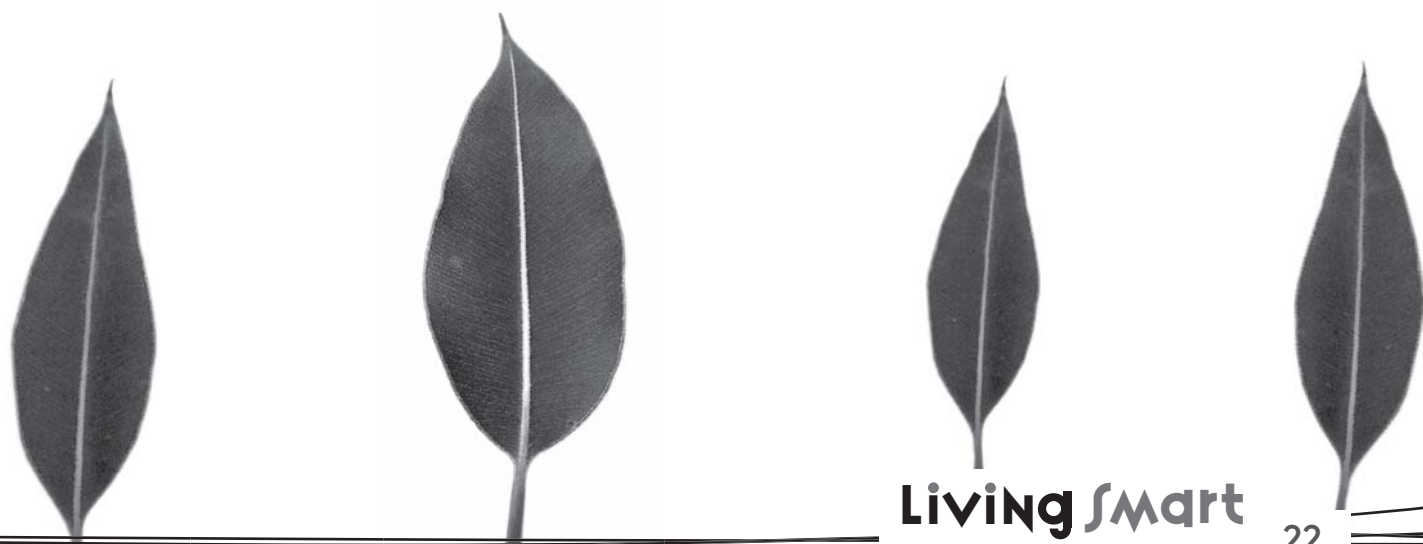
Remember!

That all our rubbish whether it is made from steel, aluminum, paper, glass or plastic.

- Comes from raw materials taken from the natural environment
- Resources such as water and energy are used in their manufacture
- Greenhouse gases and pollutants are created as by-products

Other ways to recycle

- Did you know that nearly half of a household's waste is made up of organic material, which you can recycle at home through a compost bin or worm farm. Read our Garden Smart for Productivity section to find out how.
- Make use of verge collections to recycle your green waste and household goods that can't be reused. To find out about upcoming verge collections in your area check with your local council.
- The Autoparts Recyclers Association of Australia, www.apraa.com will help you find a dealer in your local area that can recycle your car into reusable parts and metal materials. It will also help you locate secondhand parts for your car rather than buying new.
- Australians throw away more than 18 million printer cartridges every year. This amounts to over 5,000 tonnes of material, including photocopier toner bottles and drums, that will eventually end up in landfill. You can now drop off these items for recycling at participating Australia Post and Harvey Norman stores. Visit www.planetark.com.au/cartridges to find a drop off point near you.
- If you have a cupboard full of plastic bags at home take them to your local Coles supermarket for recycling. Look for the red wheelie bin by the checkouts.
- All makes and models of mobile phones, batteries and accessories can be recycled. Contact the Mobile Phone Industry Recycling Programme for a drop off point near you, 1300 730 070 or visit www.phonerecycling.com.au
- The Computer RecycleIT Centre in Osborne Park will recycle, reuse and resell almost all computer equipment and components visit www.recycleit.net or call 92449048 for more info.





TOP 5 TIPS for living waste smart!

- Reduce the amount you buy, make do with less or make your own
- Buy products with less packaging or packaging that can be recycled
- Stick to your Council's recycling guidelines
- Create your own compost or worm farm (see Garden Smart)
- Give unwanted goods to charity

Want to find out more?

Books

Ha, T. (2003) Greenology: How to live well, be green and make a difference. Allen & Unwin, NSW.

Websites

If you want to keep up to date with global waste management initiatives check out Waste Management World. A very informative website that has stacks of articles on what the rest of the world is doing. www.jxj.com/wmw

Some other interesting waste sites you can look at are

www.wastewise.wa.gov.au

www.wastenet.com.au





Water Smart

Conserving water for the future

Why conserve water?

Australia is the driest inhabited continent on the planet. There are three main reasons why the Perth community urgently needs to decrease the amount of water it uses.

Less Rain for More People – Rainfall in the South West Region of WA has been below average since 1975 and the average inflow into catchments has fallen by 45%. Meanwhile the population of the South West Region is increasing.

Protection of the Environment – 76% of the mean annual flow in the south west needs to be maintained to ensure ecosystem health. You can only take so much water away before it starts to hurt the environment.

Cost to the Community – New fresh water resources are costly. The Stirling-Harvey Redevelopment Scheme cost over \$275 million dollars to complete. Water conservation options are much more cost effective than creating new supplies and will save both the government and the tax-payer money.

Did you know?

- That only 3% of the world's water is fresh and only 0.3% is available to humans.
- Just one full flush of an inefficient toilet can use up to 11 litres.
- The average Perth household uses 1259 litres of water each day this is equivalent to ten swimming pools a year!
- Total average water use of Perth households has increased 55% since 1982.
- Each year about 178 million kilolitres of scheme water is used on Perth gardens. This is more than double the entire contents of Mundaring Weir.
- The energy required to pump water to Perth households creates 354,000 tonnes of greenhouse gases a year.
- In 2001, the Perth's dams experienced their lowest stream inflow over a 12 month period on record. This was 80% below the long-term average.
- UNESCO has predicted that by 2020 water shortage will be a serious worldwide problem.

Where does our water go?

It is hard to imagine how an average household can use 1259 litres of water a day. Where does it all go? At least half of this water goes on the garden, but can be even more during summer. Next is the bathroom with showers and toilets using 26% of a household's water. Your washing machine and dishwasher will use 13%. Have a look at the graph below and decide where you can most easily save some water.

(Water Corporation, 2002)

Average water use in has increased by 55% since 1981. In addition population is expected to rise at 1.7% a year.

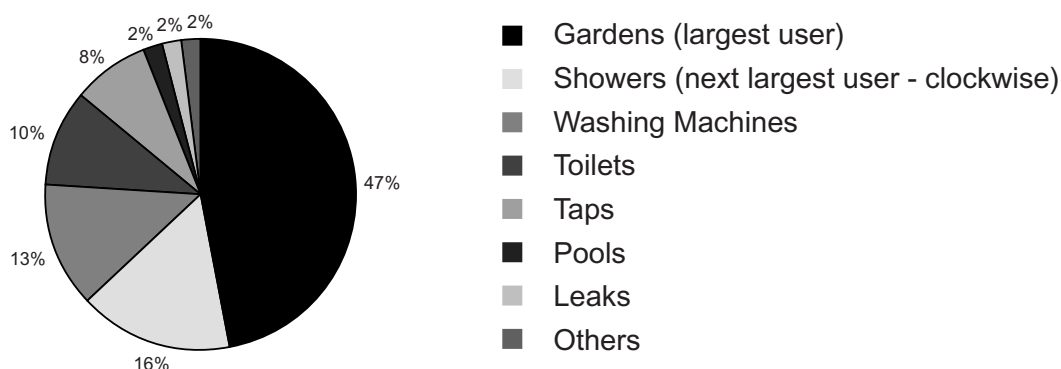
By the year 2031, Perth is expected to need an extra 150 gigalitres of water.

Water in the home

Changing some simple behaviours can result in saving a lot of water. For example, a running tap will use up to 15 litres of water a minute, consider this every time you turn on the tap. By turning the tap off while brushing your teeth you can save up to 420 litres a year. Using your washing machine and dishwasher more efficiently and being more conscious about your showers are all simple ways you can start saving water. Use the tips in our water efficient house to ensure you are adopting water smart behaviour.

Water smart garden

Almost half of a household's water goes on the garden and this can increase to up to 70% in summer. The average garden hose delivers 1000 litres of water an hour. Use the tips in our water efficient house to ensure that you are watering your garden efficiently. Better yet read our Garden Smart section and learn how to develop a native garden that uses minimal water.



Primary and secondary treatment systems can be expensive, need to be approved by your local government and only those systems that have been approved by the Executive Director of Public Health can be installed. However rebates are now available from the Water Corporation.

Water efficient house

Around the house

- Repair all leaky taps both inside and outside your house.
- Buy AAA water efficient appliances.
- While waiting for the hot water to come down the pipes, catch the cool water to water plants, fill up your drink bottle or fill the kettle.
- Fit aerators to your taps, these fit easily inside your taps and will reduce the flow while maintaining water pressure.
- Keep washing your car to a minimum and consider whether you need to wash it at all.
- If you do wash your car use a bucket only and do it on the lawn.
- Insulate your hot water pipes – you will get hot water quicker and avoid wasting water while it heats up. Read our Power Smart section to find out how.
- Consider installing a rainwater tank. Each year 40,000 litres of water can be collected from a 100m² roof. Rebates are available from the Water Corporation.
- Use a broom rather than a hose to clean paved areas.

Don't forget!

A running tap uses 15 litres of water every minute and a running hose uses 1000 litres of water every hour.

In the Kitchen

- Hand wash dishes rather than using the dishwasher, and only wash once a day rather than doing multiple small washes.
- Do not rinse dishes under a running tap. Use a filled bowl or second sink.
- If using a dishwasher only run it when it is full.
- See if your dishwasher has an eco or water saving option and use that.
- Use the least amount of detergent as possible to save water rinsing.
- Rinse fruit or vegetables in a half filled sink or bowl rather than under running water.
- Do not use running water to thaw frozen foods, defrost overnight instead.
- Keep a bottle of drinking water in the fridge instead of running the tap all the time.
- When boiling pasta, vegetables or rice use just enough water to cover them and put the lid on. This will save water and also reduce cooking time.
- Invest in a reusable microfibre mop and you will save a bucket of water every time you wash the floor.

In the Bathroom

- Try and save water when showering. Take shorter showers, use less pressure, turn water off while lathering and turn back on to rinse or have a bath.
- If you want a long soak, a bath will use less water than a lengthy shower.
- Turn the tap off while brushing your teeth, shaving or washing.
- Try not to flush the toilet unnecessarily – don't use it as a rubbish bin and don't flush every time.
- Check toilet for leaks by dropping some food colouring in the tank, if colour appears in the bowl without flushing there is a leak that should be repaired.
- If you have an old single flush toilet replace it with a dual flush or alternatively place a soft drink container full of water into the tank.

In the Laundry

- Buy a AAAA washing machine and receive a rebate from the Water Corporation as well as saving water on every bill.
- If buying a washing machine, front loaders will usually use less water than a top loader of the same size.
- Check to see if your washing machine has an eco or water saving option and use that.
- Use the shortest washing cycle where possible, separating heavily soiled from lightly soiled clothes.
- Always adjust your water level to suit the size of the load.
- Do not use too much washing powder or liquid as this will require more water to rinse.
- When hand washing, only fill the sink as much as you need.



Did you know that your home contributes 500kg of greenhouse gases a year just through water use? That is twice the amount produced from lighting your home for a year.

In the Garden

- Adjust your sprinklers so that they don't spray on footpaths, driveways or streets – or better yet only hand water.
- Don't cut the grass so often let it grow longer as it reduces evaporation.
- Water your lawn in the morning and not on windy days when evaporation is high.
- Water directly over the root zone, not on leaves or between plants.
- You do not need to have a green lawn all year round. Think of it as green in winter, golden in summer.
- Plant drought resistant native trees and plants.
- Group plants according to their water needs.
- Use mulch to cover bare ground in gardens and around trees to slow down evaporation.
- Put organic matter in the soil so it absorbs more water. Or use a soil wetting agent to absorb and retain more water, particularly if your soil is water repellent.
- Use a water timer to check how long you are watering, even if you are doing it by hand, you may not realize how much you are daydreaming.
- Fit your hose with a shut off nozzle so you can water with a fine spray, and turn off water when moving between planted areas.
- A soil moisture sensor connected to an irrigation system can prevent over-watering.
- Avoid over fertilising your lawn. Applying fertilisers increases the need for water.
- Remove weeds as they will compete with your plants for water and nutrients.

Buying water efficient appliances

You can save water in your home by installing water efficient devices and appliances. A 'AAA' water efficient washing machine will use 64 litres of water compared to 170 litres in an inefficient washing machine. Installing a low flow showerhead can reduce the amount of water used by half. Installing water efficient appliances may cost a little in the beginning but will save you money in the end.



Alternatives to Scheme Water

Private rainwater tanks are a good way of reducing the amount of scheme water you use and after the initial cost of installing the system, the water is free. Rainwater can be used for just about any domestic purpose including drinking. However if you live in a high traffic area or industrial area, it may be better for use on your garden or can be connected up to the house for toilet flushing. If you are considering getting a tank installed, make sure you get professional advice to ensure you get the right size, the materials of your roof are suitable and you get a tank which meets Australian Standards. Also check if you need council approval before you install a rainwater tank. Using a water tank will show you just how much water you are using and how quickly it runs out.

Bore water. There are currently about 130 000 private bores in Perth that draw on shallow groundwater to water their gardens rather than using high quality scheme water. However not all areas of Perth are suitable for bores; water near the coast may be saline, in some places the water table may be too deep and some areas may be too environmentally sensitive (i.e. near wetlands). Before installing a bore, check that you are in a suitable area and get permission from your council. If you already have a bore make sure you are still being water smart in your garden – having a bore does not give you a licence to use as much water as you want.

Greywater is the name used for water that is discharged from household appliances and water using fixtures such as showers, washing machines and basins (not including toilets). This water can be reused for watering the garden.

There are three methods for reusing your greywater; 1) manual bucketing – transferring water from your laundry sink or bath onto the garden rather than it going down the drain 2) primary treatment system – uses a sedimentation tank to screen out oils, greases and particles and uses a below ground irrigation system and 3) secondary treatment systems– further treats and disinfects the water using chemicals and can use an above or below ground irrigation system.

Manual bucketing is the only method where you can reuse greywater without the need for any approvals. If you do reuse your greywater in this way, try to follow these guidelines: use garden friendly detergents, only biodegradable products and products with low phosphorous, sodium, boron, chlorine and borax should be used; use bleaches and fabric softeners sparingly; apply in several locations rather than one single point, don't let it pool; don't apply to areas used by children and pets; don't use water that has been used to wash soiled nappies; don't discharge on edible plants or where fruit has fallen; don't store greywater; don't let it go on your neighbours' property.

If you have a bore, make sure you are still being water smart in your garden. Having a bore does not give you a license to use as much water as you want.



TOP 5 TIPS for living water smart!!

- Install a low flow shower head and have shorter showers.
- Only run full loads in dishwasher and washing machine.
- Minimise water use in the garden.
- Install or make a dual flush toilet.
- Reuse greywater in your garden.

Want to find out more?

Books

De Villiers, M (1999) *Water wars: Is the world's water running out?* Phoenix Press, London.

Ha, T (2003) *Greenology: How to live well, be green and make a difference.* Allen & Unwin, NSW.

Water Corporation (2002) *Planning for Perth's Water Needs.* Downloadable from www.watercorporation.com.au/publications/12/water_planning_pdf_doc.pdf

Magazines

ReNew. Technology for a sustainable future. Alternative Technology Association
www.ata.org.au

Websites

The Water Corporation website has lots of information on how to save water, water rebates, a online water calculator and an interactive waterwise house. www.watercorporation.com.au

www.savewater.com.au (try the saving water in the home house tour)

www.wrc.wa.gov.au – has information on water quality and bores.

www.health.wa.gov.au (Look under G in the A-Z guide for the greywater guidelines)



Smart Gardens for Biodiversity

Creature friendly and native gardens

What is biodiversity?

Biodiversity is the web of life. It is all the many plants and creatures that live on earth including humans, animals, plants, fungi and microbes; from the smallest insect in the soil to the largest mammal in the ocean.

There are three levels of biodiversity;

Genetic diversity: the variety of genetic information contained in all individual plants animals and microorganisms that inhabit the earth.

Species diversity: the variety of species on earth.

Ecosystem Diversity: the variety of habitats, biotic communities and ecological processes.

Why protect biodiversity?

Biodiversity provides us with a wealth of invaluable services. It keeps our water drinkable; it keeps our soil healthy to grow the food we eat, it provides us with medicines and the air we breathe. It also filters and cleans up the pollution we pump out into the air, rivers and oceans. The services provided by biodiversity not only determine the health of ecosystems, but also their productivity (e.g. food and water) that we rely on for our existence. Without the support of biodiversity humans would not be able to exist on the earth.

We should also consider that biodiversity has its own intrinsic value. The animals and plants we share the earth with have as much right to be there as us. Many people argue that we need to protect biodiversity for its own sake and that we have no right to destroy it – not even for the economy.

If you own a cat or dog then make sure they are wearing a bell so as to warn other wildlife and keep them in at dawn and dusk when the birds are most active. own a cat or dog then make sure they are wearing a bell so as to warn other wildlife and keep them in at dawn and dusk when the birds are most active.



Are we supporting biodiversity?

There are about 260,000 hectares of remnant native vegetation in the Perth Metropolitan area. The State Government Bush Forever plan identifies 51,200 hectares of this as regionally significant. Despite its significant value, Perth's remnant vegetation is still being cleared and degraded through mismanagement.

Within the Swan Coastal plain there are 25 Threatened Ecological Communities, 11 of these are critical. The processes threatening these communities include declining groundwater levels, invasion of pests such as rabbits and pigs, invasion of weeds such as *Watsonia* and garden species, sand mining, increased nutrients in wetland areas and physical disturbances from vehicles and recreation. All of these processes are related to past or current human practices.

Are we losing biodiversity?

Since European settlement Australia has lost 19 mammal species, 10 marsupial species, 20 bird species and 76 plant species. Today more than a hundred mammal species are under threat and forty percent of Australian forests have been cleared.

Just in the Swan Coastal Plain there are 4 mammal species, 4 bird species, 2 reptile species, 1 crustacean species, 2 native bee species and 1 moth species that are considered rare or likely to become extinct. There are also high levels of rare flora on the Swan Coastal Plain including 16 species considered to be critically endangered, 16 species considered endangered and 13 vulnerable species. The extinction of species is not just happening on the other side of the world in the Amazon rainforest but on our very doorstep.

According to the 2001 State of the Environment Report;

Ecosystem diversity is highly fragmented and pressure is increasing due to land clearing and other threatening processes. The diversity of species, although variable, is generally deteriorating and pressure is increasing. Genetic diversity is also declining and we have limited knowledge of this area.

What can you do??

By creating a native garden you can create a habitat for local animals and help protect local plant species. This will create a favourable environment for local plants and animals and can create valuable stepping stones for wildlife to move about. You can also get involved in protecting bushland areas in your community.

Don't forget that many of the actions presented in other chapters of this book will also help you protect biodiversity. For example, better waste management by reducing, reusing and recycling will save resources and therefore prevent habitat destruction through mining and forestry. Not putting chemicals down the drain will prevent nutrients and chemicals from getting in the groundwater and waterways. Saving water will mean less water extraction from the environment and more for our threatened ecological communities, flora and fauna.

The benefits of native gardens

Native gardens will provide tranquil and peaceful areas for you and your family to relax in. Native gardens require less maintenance, fertilisers and water, making it more cost effective, less time consuming and less damaging to the natural environment. Not to mention they produce some of the best flowers in the world.

How to create a native garden

- Find out what the local plant and tree species are for your area. These will help to attract native animals (see below for more information on how to do this).
- Plant a variety of species and try to create a number of different layers like you would see in natural areas.
- Groundcovers, local grasses and mulch are important for providing food for lizards, beetles and worms which in turn provides food for larger animals.
- Create habitats for animals by building a frog pond, bird boxes, bird baths and creating sunny rocky areas for lizards.
- Use mulch to prevent growth of weeds and excess evaporation.
- Look at demonstration native gardens for ideas, such as Kings Park or Booyeembara Park, Fremantle.

Local plants for your area

The Perth metropolitan area has a variety of soil types and weather conditions that influence what native plants will grow best in your garden. For example something that thrives in a Darlington garden in the hills may not do so well in a Cottesloe garden on the sandy coastal plain. To have the most success it is best to grow plants that are native to your local area not just native to Western Australia. This means using plants that are from the original vegetation complex system. To find out what vegetation complex system you live in visit the APACE website (www.argo.net.au/apace/soiltypes) and take a look at their map. You can then get a list of the plants suitable for your area.

Most nurseries will now sell native species as well as exotic species. Some nurseries that specialise in the native plants include, the APACE Community Revegetation Nursery, Johannah Street, North Fremantle; Lullfitz Nursery, Caporn Street, Wanneroo; Zanthorrea Nursery, Watsonia Rd, Maida Vale; Jandakot Field Nursery, Muriel Crescent, Jandakot; Boola Wongin Nursery, Armadale Rd, Forrestdale; Carramar Coastal Nursery, Mandurah Rd, Baldivis; and Narrogin Plant Nursery, Hough St, Narrogin.

The extinction of species is not just happening on the other side of the world in the Amazon rainforest but on our very doorstep.

The water thirsty lawn, alternatives to grass!

Believe it or not, you don't need to have rolling green lawns to have a beautiful garden. Instead create a dynamic piece of bushland in your own backyard. If you want some open areas there are many native ground covers or native grasses that you can use. If you need an open area for entertaining create a paved area, you don't need the grass. Most garden lawns rarely if ever get used. Just think this way you will have to go to the local park to play cricket, which means you will get more exercise and might even make friends with your neighbours.

If you do have to have a small patch of grass, ask your nursery for the most water tolerant variety and plant a tree nearby to give it some summer shade.

Biodiversity get out and see it

Enjoy the bushland in your area, take a walk and experience nature. Join a local friends group and get involved with protecting your local bushland. This is a great way to not only help nature, but to get involved in the community, meet your neighbours and get a bit of exercise.

Renew your energy to protect biodiversity by going out and enjoying it. There is over 25 million hectares of land protected by the Department of Conservation covering everything from ancient landscapes, rugged gorges, tropical reefs, towering forests, and woodlands to white beaches. With 69 national parks, 8 marine parks and many more conservation reserves there is plenty of world class biodiversity to see in our very own state.

TOP 5 TIPS for living garden smart for biodiversity

- Plant some native plants in your garden.
- Replace some or all of your grass.
- Replicate natural bushland by creating vegetation layers.
- Create safe havens for wildlife.
- Get out and enjoy the local bushland or participate in a local friends group.



Want to find out more?

Books

Archer, M. & Beale, B. (2004) *Going Native – Living in the Australian Environment*. Hodder Headline, Sydney.

Attiwill, P. & Wilson, B. (2003) *Ecology: An Australian Perspective*. Oxford University Press.

Greening Western Australia (1996) *Bush Plants for Perth Gardens*. National Trust of Australia, Perth.

Mitchell, D., Williams, K. Desmond, A. (2002) *A Biodiversity Audit of Western Australias 53 Biogeographical Subregions – Swan Coastal Plain 2*. Department of Conservation. Downloadable from www.naturebase.net.

Nevill, S. (2000) *Travellers Guide to the Parks and Reserves of Western Australia*. Simon Neville Publications, Perth.

Pizzey, G. (2000) *The Australian Bird Garden: Creating Havens for Native Birds*. Angus & Robertson, Australia.

Powell, R. & Emberson, J. (1990) *Growing Locals – Gardening with local plants in Perth*. Western Australian Naturalists Club.

Magazines

Department of Conservation. *Landscape - WA's conservation, parks and wildlife magazine*. Available from newsagencies or www.naturebase.net

Australian Geographic Society. *Australian Geographic*. www.australiangeographic.com.au

Websites

The Department of Conservation's website has a wealth of information on Western Australia's conservation parks, flora and fauna. www.naturebase.net

APACE has a website which provides lists of native plants suitable for the different soil regions of the Perth area. www.argo.net.au/apace

The Boola Wongin Nursery website also has lots of interesting information on growing Western Australian Plants www.boolawongin.com.au

The Wildflower Society of WA has lots of information on native wildflowers and how to grow them or how to see them in the natural environment. www.members.ozemail.com.au/~wildflowers

The Water Corporation also has information on growing native plants. Try this brochure for a good overview www.watercorporation.com.au/publications/11/Grow_Local_Plants.pdf



Smart Gardens for Productivity

Organic gardens that produce

Did you know ... that you can help the environment simply by making your garden more productive. And you will get so many benefits from doing it!

- You will reduce the amount of food you have to buy.
- Reduce the amount of packaging you throw away.
- You can be sure your food is free of chemicals and pesticides.
- You will have a new hobby that gives you exercise.
- You will have fresh vegies and herbs ready to use that are not only fresher and healthier but also taste better!

You do not need a very large area to start growing your own fruit, vegies and herbs. In fact a good size planter box is all you need for growing your favourite herbs and a few choice vegies.

Here are some tips to make sure your garden is productive

- Pick an area of the garden that gets at least four to five hours of sun a day.
- Rotate your crops each season so that you don't deplete the soil as quickly.
- Take advantage of companion planting.
- Do not water too frequently or too quickly, a slow fine spray or a drip on each plant is best for vegetable gardens (and is more water efficient).
- Dig organic compost or mulch into the soil, this will provide vital nutrients without the need for chemical fertilisers and will reduce the amount of water needed.



Chemical free pesticides and fertilisers

When growing your own fruit and vegetables use non-toxic pesticides and fertilisers. These are better for you, are better for your soil as they won't harm important soil organisms and are better for our environment as they won't pollute our waterways. Pesticides are designed to kill and are toxic to humans – just read the labels they even tell you so. Use the techniques and recipes below, to create a toxic free garden.

- Quassia chips, which are available from health food stores can be used to make a spray to control aphids and caterpillars. Boil a litre of water with one tablespoon of quassia chips in an old saucepan and leave to simmer for two hours. Use one part quassia solution to two parts water when mixing your spray.
- Seaweed spray is a non toxic organic spray that can be used to combat most fungal and bacterial infections. To make collect seaweed from the beach and wash to remove excess salt, put it in a bucket of water and leave to soak for several days until the water turns pale brown, then spray on your plants.
- Pyrethrum is the best known organic pesticide and will control aphids, white fly and many other insect pests. However, it is fatal to bees so don't spray when the bees are at work.
- Rather than using a chemical weed killer pull out the weeds yourself or pour hot salty water over them.
- A saucer filled to the brim with beer is just as effective as poison baits in controlling snails. A protective layer of sawdust around new seedlings will also stop snails from devouring them.
- Using mulch on your garden beds will help deter weeds.

Create your own fertiliser

Another great way to have a healthy garden is to have your own compost heap or worm farm. This will provide rich, natural, chemical free organic matter for your garden.

This also means you no longer have to throw away your food scraps or green garden matter, but can put them back to good use in your garden. Read below to find out if a compost heap or worm farm will suit you best.

Composting – is the rotting or breaking down of organic matter into small particles of fertile soil.

Good compost has a pleasant earthy smell, has few recognisable pieces of the original organic material and is a fairly uniform dark brown or black colour. The finished product can be dug into garden beds, spread as mulch around shrubs and trees or can be sieved and used as a top dressing for lawns.

Pesticides are designed to kill and are toxic to humans.

Think twice about spraying them on plants that you plan to eat.

You can create your own compost heap easily in a corner of your garden. Place your scraps in a heap including food scraps (not meat), paper, tea and coffee dregs, lawn clippings, leaves and twigs, even the contents of your vacuum cleaner. Keep it moist and turn it over occasionally to aerate. If you want you can cover it with a layer of dirt to keep the flies out. Alternatively you can purchase a compost bin. If you are wanting your compost quickly buy one with a rotating handle and turn 2-3 times a day so that it aerates and the bacteria is able to work more quickly.

Worms love to eat all your fruit and vegetable scraps.

In fact they will eat 1/5th of their body weight in food each day!

When composting, it is best to mix four parts of soft green materials such as grass clippings, weeds, fruit and vegetable peelings and wastes with one part brown material such as sawdust, shredded prunings, newspaper or dry leaves. Keep the compost damp but not soggy, you may have to add some water, especially in summer. Too much water will reduce the air pockets and airflow causing the compost to become smelly. For bins that have an open bottom make sure they are in a sunny area and in direct contact with loose soil to allow drainage, airflow and entry of earthworms and microorganisms.

Worm farms - are a great alternative if you only have a small backyard. An enclosed worm farm is even suitable for courtyard areas. Worms love to eat all your fruit and vegetable scraps. In fact they will eat 1/5th of their body weight in food each day. So for 3000 worms 150g/day will keep them happy. The worms will continue to multiply as you increase the amount of food provided, so after 3 months you can double the quantity. The worms will eat all your organic food scraps except meat and dairy and they don't like lots of citrus, chilli or onion. While worms aren't too fussy they do like their food in smaller pieces, the smaller the pieces the faster they eat.

Worm farms will produce both worm castings and liquid fertiliser. Worm castings are an organic fertiliser, containing nutrients more readily available to plants than any composted materials or factory made fertilisers. They hold up to ten times their own weight in water, which is great for our dry soils and have no negative environmental impacts. The liquid waste from worm farms is a highly concentrated fertiliser that can be collected, diluted and applied to gardens.

When managing your worm farm make sure it is kept moist. If it becomes dry in summer spray it with moisture but do not water it. Ensure that liquid can drain from the worm farm so that the worms don't drown. Worm farms should be kept out of the rain and the direct heat of the sun.



Plants don't like to live alone!

They can make great companions to each other – exchanging nutrients, enhancing flavours and fighting off enemies.

Companion Planting

Many plants have natural substances in their roots, flowers and leaves that can either repel or attract insects depending on your needs. In some cases they can also enhance the growth and flavour of nearby plants. Companion planting helps bring a balanced ecosystem to your garden allowing nature to do the work for you. Below are some common companion plants you can use in your garden.

Basil – plant with tomatoes to improve growth and flavour.

German Chamomile – improves flavour of cabbages, cucumber and onions.

Chervil – keeps aphids off lettuce.

Chives – improves growth and flavour of tomatoes and carrots.

Coriander – repels aphids, spider mites and potato beetle.

Garlic – plant near roses to repel aphids.

Mint – deters white cabbage moths, ants, rodents, flea beetles, fleas and aphids.

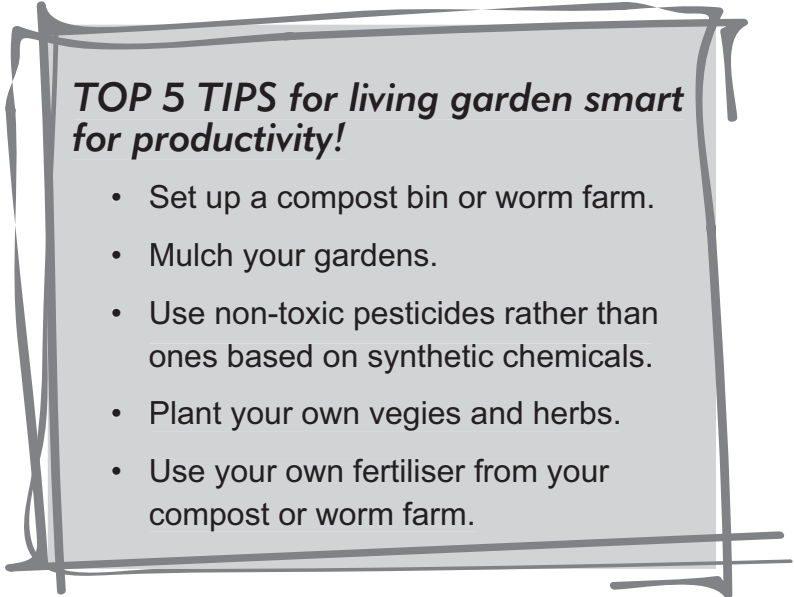
Peas – fix nitrogen in the soil. Plant near corn and they will provide extra nitrogen. Corn is a heavy feeder so this is a great combination.

Nasturtiums – plant as a barrier around tomatoes, radishes, cabbage, cucumbers and under fruit trees. Deters woolly aphids, white flies, squash bug, cucumber beetles and are a great trap crop for black aphids.

Hot peppers – have root exudates that prevent root rot and other diseases.

Rosemary – plant with cabbage, beans, carrot and sage. Deters cabbage moth, bean beetles and carrot flies.

Sage – use as a companion plant with broccoli, cauliflower, rosemary, cabbage and carrots.



TOP 5 TIPS for living garden smart for productivity!

- Set up a compost bin or worm farm.
- Mulch your gardens.
- Use non-toxic pesticides rather than ones based on synthetic chemicals.
- Plant your own vegies and herbs.
- Use your own fertiliser from your compost or worm farm.

Want to find out more?

Books

Bennett,P. (2003) Organic Gardening 6th Ed. New Holland publishers, Sydney.

Ha, T. (2003) Greeniology: How to live well, be green and make a difference. Allen & Unwin, NSW.

Marshall,T. (2002) Recycle your garden the essential guide to composting. Gardening Australia, Sydney.

Mollison,B. & Slay, R.M. (2003) Introduction to Permaculture. TAGARI Tasmania.

Morrow,R. (2002) Earth users guide to Permaculture. Simon & Schuster, NSW.

Pears,P. (2004) Organic gardening in Australia. The Complete Guide to Natural and Chemical-free Gardening. Dorling-Kindersley, Victoria.

Stewart,R. (2003) Australian Green Home and Garden: Practical and inexpensive ways to reduce the use of chemicals in your garden and home. Black Inc, Vic.

Magazines

ABC Magazines. The Organic Gardener. www.shop.abc.net.au

Websites

Sustainable Gardening Australia provides an interesting website with useful fact sheets and monthly newsletters. www.sgaonline.org.au

Some other interesting sites are;

www.organicdownunder.com

www.greenharvest.com.au

www.tagari.com – Bill Mollison’s permaculture website

www.gardenguides.com/TipsandTechniques/tip-tech.htm – has a vegetable companion chart and herb companion chart.

