

# Hills Local

## Permaculture Group

### IN THIS ISSUE

Home Wine Making Presentation

Mundaring Community Gardens Committee begins!

The Gander That Got the Goose

Healing the Body (part 2)

Possums to Climb Over Dangerous Roads

Tackling Termites with Technology

World Phosphorus Shortage Looms

Guerrillas in the Midst

Launch of Bandicoot Refuge Project

### Regular

What's the Buzz

Links

**NEXT MEETING—  
SATURDAY 16TH  
OCTOBER**

VISIT TO  
PERMACULTURE  
GARDEN IN  
DIANELLA

**\*\* EVERYONE \*\***  
to bring a small plate of goodies for morning tea and a spare mug if you have one.

Volume 1, issue 7

September 2010

### Home Wine Making Presentation

Peter gave an entertaining and inspiring talk based on his own experience with wine making at home. The talk was followed by a wine tasting. It was a thoroughly enjoyable morning. Here follow the notes that Peter provided.

#### Introduction

Anyone can make wine – no special knowledge is required.

Use only quality fruit

The process converts sugar to carbon dioxide and alcohol

Rack off means to remove impurities

#### The Process

##### Equipment

You should be able to find this equipment at any home brewing or home wine-making supply shop.

Refractometer

pH meter (electronic) – measures pH level and temperature

Hydrometer

Trial jar

Air locks

Oak chips

Crusher – can use masher

60 litre drum / 30 litre drum

Open top fermenter

Large nylon straining bag or filter paper

Cheesecloth

Clear, flexible plastic tubing

Two glass jugs

750 ml wine bottles

Corks or bottle caps

Hand corker or bottle capper



***Don't use metal containers or tools as these will react and add flavour that is not wanted.***

#### Sterilising equipment

Clean equipment with hot water (at 80° C) with 600 to 800 ppm of metabisulphite solution. (100 ppm = 1.50g in 10 L). This will remove oxygen and contaminants.

#### Inspecting and picking grapes

Inspect the grapes on vine for ripeness. You can either squeeze the grape and taste the juice or use the hydrometer to measure sugar content. The ideal sugar content is 22° Brix and the fruit should taste sweet, ripe and slightly tart. Pick

when grapes are between 21.6-25.2 Brix (12-14 Baumé) as this will produce a wine with 12-14% alcohol by volume. Higher than 24 Brix is too high.

Twenty kilograms of grapes will make approximately 8 bottles of wine.

### **Destalking (or de-stem)**

De-stem the bunches of grapes. The stalks can give a bitter taste. Remove any debris or insects from bunches of grapes.

### **Crushing grapes and killing wild yeast**

Extract the aroma and flavour of the fruit by crushing or pressing. The extracted fruit is called "must". Once extracted, pour the must into the first fermentation container.

Add about 75 to 100 ppm metabisulphite solution (1.2-1.5g/10 kg of grapes) to suppress wild yeast activity and to promote growth of cultured yeast. Leave for 3-4 hours.

### **Check pH and adjust if necessary**

Adjusting the juice or "must" of your wine is critical. Acid content is measured with pH meter. The ideal pH is below 3.6 for dry reds and below 3.3 for dry whites.

You also need to monitor the sugar level with your hydrometer. The must should be about 22° Brix for both reds and whites.

The temperature of your must can also be adjusted to provide the perfect environment for yeast cells.

### **Yeast culture**

Yeast starter culture should be added as soon after crushing as possible.

### **Fermentation**

Use an open container, use skins, juice and seeds.

Allow to ferment for 3-5 days on skins (half of sugar converted to alcohol). Aim for 1.0 to 2.0° Baumé decrease each day.

Maintain temperature between 20° to 25° C.

### **Press down cap**

Skins will rise to form a cap, push this down 3 times each day (allows the heat to dissipate and extracts more flavour and colour).

Drain the juice from the skins into another vessel to allow fermentation to finish.

### **Pressing**

Skins re-pressed to recover the remaining wine. This is either added to the bulk or kept separate (it will be darker and more tannic).

### **Clarification**

One or two weeks after completion of fermentation the wine should be racked off the lees. Sulphur dioxide level should be raised to about 100 ppm. Add 50 ppm of sulphur dioxide (0.1g/L of metabisulphite is usually adequate).

**Rack off**—"racking" means transferring the fermenting wine away from sediment

A second racking is advisable after about 2 months.

Another racking is advisable 4 months later.

### **Maturation**

Red wines are usually aged for some time before bottling. Age in Oak will enhance the taste.

When ready bottle.

If using plastic containers to store wine it will improve the flavour to add Oak Chips to provide the oak flavour found in wine usually stored in oak barrels.

### Process for the different wines

Red wine	White wine	Rosé
De-stem and crush	De-stem and crush	Same as red wine except press skins at time of crush or shortly after
<i>Red wine is fermented with the skin and pulp</i>	Press and remove Marc (skins and seeds)	
Kill wild yeast	Kill wild yeast	
Check pH and adjust if necessary	Check pH and adjust if necessary	
	Refrigerate for 24 hours	
Add yeast	Add yeast	
Press and remove Marc (skins and pips) (few hours to several days)		
Press down cap		
Ferment in closed container	Ferment in closed container	
Add fining – Bentonite, Isinglass or egg white	Add fining – Bentonite, Isinglass or egg white	
Rack off	Rack off	
Add Oak Chips	Add Oak Chips	
Rack off every couple of months	Rack off every couple of months	
When ready bottle (12 to 16 months)	When ready bottle (6 to 8 months)	

### Wine making books

*Wine From 100 Vines* by John Dixon

A book describing how to establish a small vineyard and how to make wine on a small scale. Ideal for the amateur home winemaker.

*Making Good Wine: A Manual of Winemaking Practice for Australia and New Zealand* by Bryce Rankine

This book is intended for professional and amateur winemakers, students, wine lovers and buffs who want to know more about wine. It explains the principles as well as the practices of winemaking, and highlights the remarkable nature of the product.

### Suppliers

West Brew Distributors, U17 / 70 Roberts Street (East), Osborne Park. 9242 2059  
 Big Bubble, 141b Great Eastern Highway, Midland 9274 1992  
 BrewMart, 21 John Street, Bayswater 9370 2484

Information provided by Peter Riley

Thank you Peter.

## Mundaring Community Gardens Committee begins!

The inaugural committee meeting for the Mundaring Community Gardens was held on Monday the 6<sup>th</sup> of September. The committee is the next step in formulating ideas, research, and costings from our community to provide to Council for approval.

The committee is made up of five local residents, two shire staff and one councillor Jenny Johnson and will report directly to council on behalf of the community.

The story so far involves some local residents and community groups contacting Mundaring shire over the last 12 to 18 months with suggestions and requests for a local community garden. After unanimous support by council in establishing a feasibility study, a community meeting back in April 2010 and the call for nominations to contribute to the committee we are now progressing to the next level and **this includes you**.

The committee needs **your** valued input and so is calling for comment on suggestions and ideas as well as support in a range of areas. This call for comment has been split into two groups, the first is calling for existing community groups in the Mundaring Shire (such as HLPG) to comment on what they could use such a site for and the type of needs the group may have. The second group is for comment from our local businesses that could assist in the development, funding and expertise needed to maintain and sponsor such a site for the long term.

If you are involved in a community group or own / work in a local business we need you to assist in this information gathering process. I am currently coordinating this information as a member of the committee and student in Cert IV Permaculture and can **fax / email the feasibility forms to you**.

Please take the time to mention this wonderful opportunity to friends, neighbours and workmates and pass on my details to them if they can assist and I will send them these feasibility study forms.

This information is needed as soon as possible so please support something we could all benefit from in the future.

Bernie Elsner  
Permaculture Practitioner  
Mundaring resident  
Community Gardens Committee Member

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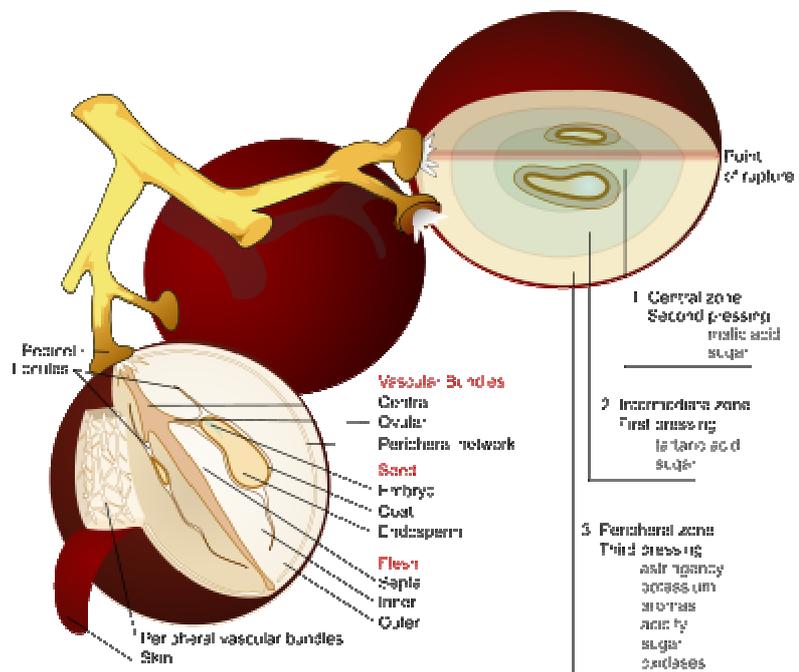


## Winemaking Information for those interested in more of the facts

### Process

Anatomy of a grape, showing the components extracted from each pressing. [Picture below]

After the harvest, the grapes are taken into a winery and prepared for primary ferment, at this stage red wine making diverges from white wine making. Red wine is made from the must (pulp) of red or black grapes that undergo fermentation together with the grape skins. White wine is made by fermenting juice which is made by pressing crushed grapes to extract a juice; the skins are removed and play no further role. Occasionally white wine is made from red grapes, this is done by extracting their juice with minimal contact with the grapes' skins.



Rosé wines are made from red grapes where the juice is allowed to stay in contact with the dark skins long enough to pick up a pinkish color, but little of the tannins contained in the skins.

To start primary fermentation yeast is added to the must for red wine or juice for white wine. During this fermentation, which often takes between one and two weeks, the yeast converts most of the sugars in the grape juice into ethanol (alcohol) and carbon dioxide. The carbon dioxide is lost to the atmosphere. After the primary fermentation of red grapes the free run wine is pumped off into tanks and the skins are pressed to extract the remaining juice and wine, the press wine blended with the free run wine at the wine maker's discretion. The wine is kept warm and the remaining sugars are converted into alcohol and carbon dioxide. The next process in the making of red wine is secondary fermentation. This is a bacterial fermentation which converts malic acid to lactic acid. This process decreases the acid in the wine and softens the taste of the wine. Red wine is sometimes transferred to oak barrels to mature for a period of weeks or months, this practice imparts oak aromas to the wine. The wine must be settled or clarified and adjustments made prior to filtration and bottling.

### The grapes

The quality of the grapes determines the quality of the wine more than any other factor. Grape quality is affected by variety as well as weather during the growing season, soil minerals and acidity, time of harvest, and pruning method. The combination of these effects is often referred to as the grape's *terroir*.

Grapes are usually harvested from the vineyard from early September until the beginning of November in the northern hemisphere, or the middle of February until the beginning of March in the southern hemisphere. In some cool areas in the southern hemisphere, for example Tasmania, Australia, harvest extends into the month of May.

The most common species of wine grape is *Vitis vinifera*, which includes nearly all varieties of European origin.

## Crushing and primary fermentation

Crushing is the process of gently squeezing the berries and breaking the skins to start to liberate the contents of the berries. Destemming is the process of removing the grapes from the rachis (the stem which holds the grapes). In traditional and smaller-scale wine making, the harvested grapes are sometimes crushed by trampling them barefoot or by the use of inexpensive small scale crushers. These can also destem at the same time. However, in larger wineries, a mechanical crusher/destemmer is used. The decision about destemming is different for red and white wine making. Generally when making white wine the fruit is only crushed, the stems are then placed in the press with the berries. The presence of stems in the mix facilitates pressing by allowing juice to flow past flattened skins. These accumulate at the edge of the press. For red winemaking, stems of the grapes are usually removed before fermentation since the stems have a relatively high tannin content; in addition to tannin they can also give the wine a vegetal aroma (due to extraction of 2-methoxy-3-isopropylpyrazine which has an aroma reminiscent of green bell peppers.) On occasion, the winemaker may decide to leave them in if the grapes themselves contain less tannin than desired. This is more acceptable if the stems have 'ripened' and started to turn brown. If increased skin extraction is desired, a winemaker might choose to crush the grapes after destemming. Removal of stems first means no stem tannin can be extracted. In these cases the grapes pass between two rollers which squeeze the grapes enough to separate the skin and pulp, but not so much as to cause excessive shearing or tearing of the skin tissues. In some cases, notably with "delicate" red varieties such as Pinot noir or Syrah, all or part of the grapes might be left uncrushed (called "whole berry") to encourage the retention of fruity aromas through partial carbonic maceration.

Most red wines derive their color from grape skins (the exception being varieties or hybrids of non-vinifera vines which contain juice pigmented with the dark Malvidin 3,5-diglucoside anthocyanin) and therefore contact between the juice and skins is essential for color extraction. Red wines are produced by destemming and crushing the grapes into a tank and leaving the skins in contact with the juice throughout the fermentation (maceration). It is possible to produce white (colorless) wines from red grapes by the fastidious pressing of uncrushed fruit. This minimizes contact between grape juice and skins (as in the making of *Blanc de noirs* sparkling wine, which is derived from Pinot noir, a red vinifera grape.)

Most white wines are processed without destemming or crushing and are transferred from picking bins directly to the press. This is to avoid any extraction of tannin from either the skins or grape-seeds, as well as maintaining proper juice flow through a matrix of grape clusters rather than loose berries. In some circumstances winemakers choose to crush white grapes for a short period of skin contact, usually for three to 24 hours. This serves to extract flavor and tannin from the skins (the tannin being extracted to encourage protein precipitation without excessive Bentonite addition) as well as Potassium ions, which participate in bitartrate precipitation (cream of tartar). It also results in an increase in the pH of the juice which may be desirable for overly acidic grapes. This was a practice more common in the 1970s than today, though still practiced by some Sauvignon blanc and Chardonnay producers in California.

In the case of rosé wines, the fruit is crushed and the dark skins are left in contact with the juice just long enough to extract the color that the winemaker desires. The must is then pressed, and fermentation continues as if the wine maker was making a white wine.

Yeast is normally already present on the grapes, often visible as a powdery appearance of the grapes. The fermentation can be done with this natural yeast, but since this can give unpredictable results depending on the exact types of yeast that are present, cultured yeast is often added to the must. One of the main problems with the use of wild ferments is the failure for the fermentation to go to completion, that is some sugar remains unfermented. This can make the wine sweet when a dry wine is desired. Frequently wild ferments lead to the production of unpleasant acetic acid (vinegar) production as a by product.

During the primary fermentation, the yeast cells feed on the sugars in the must and multiply, producing carbon dioxide gas and alcohol. The temperature during the fermentation affects both the taste of the end product, as well as the speed of the fermentation. For red wines, the temperature is typically 22 to 25 °C, and for white wines 15 to 18 °C. For every gram of sugar that is converted, about half a gram of alcohol is produced, so to achieve a 12% alcohol concentration, the must should contain about 24% sugars. The sugar percentage of the must is calculated from the measured density, the must weight, with the help of a saccharometer. If the sugar content of the grapes is too low to obtain the desired alcohol percentage, sugar can be added (chaptalization). In commercial winemaking, chaptalization is subject to local regulations.

During or after the alcoholic fermentation, malolactic fermentation can also take place, during which specific strains of bacteria convert malic acid into the milder lactic acid. This fermentation is often initiated by inoculation with desired bacteria.

### Pressing

Pressing is the act of applying pressure to grapes or pomace in order to separate juice or wine from grapes and grape skins. Pressing is not always a necessary act in winemaking; if grapes are crushed there is a considerable amount of juice immediately liberated (called free-run juice) that can be used for vinification. Typically this free-run juice is of a higher quality than the press juice. However, most wineries do use presses in order to increase their production (gallons) per ton, as pressed juice can represent between 15%-30% of the total juice volume from the grape.

Presses act by positioning the grape skins or whole grape clusters between a rigid surface and a moveable surface and slowly decrease the volume between the two surfaces. Modern presses dictate the duration and pressure at each press cycle, usually ramping from 0 Bar to 2.0 Bar. Sometimes winemakers choose pressures which separate the streams of pressed juice, called making "press cuts." As the pressure increases the amount of tannin extracted from the skins into the juice increases, often rendering the pressed juice excessively tannic or harsh. Because of the location of grape juice constituents in the berry (water and acid are found primarily in the mesocarp or pulp, whereas tannins are found primarily in the pericarp, or skin, and seeds), pressed juice or wine tends to be lower in acidity with a higher pH than the free-run juice.

Before the advent of modern winemaking, most presses were basket presses made of wood and operated manually. Basket presses are composed of a cylinder of wooden slats on top of a fixed plate, with a moveable plate that can be forced downward (usually by a central ratcheting threaded screw.) The press operator would load the grapes or pomace into the wooden cylinder, put the top plate in place and lower it until juice flowed from the wooden slats. As the juice flow decreased, the plate was ratcheted down again. This process continued until the press operator determined that the quality of the pressed juice or wine was below standard, or all liquids had been pressed. Since the early 1990s, modern mechanical basket presses have been revived through higher-end producers seeking to replicate the gentle pressing of the historical basket presses. Because basket presses have a relatively compact design, the press cake offers a relatively longer pathway for the juice to travel before leaving the press. It is believed by advocates of basket presses that this relatively long pathway through the grape or pomace cake serves as a filter to solids that would otherwise affect the quality of the press juice.

With red wines, the must is pressed after primary fermentation, which separates the skins and other solid matter from the liquid. With white wine, the liquid is separated from the must before fermentation. With rose, the skins may be kept in contact for a shorter period to give color to the wine, in that case the must may be pressed as well. After a period in which the wine stands or ages, the wine is separated from the dead yeast and any solids that remained (called lees), and transferred to a new container where any additional fermentation may take place.

## Pigeage

Pigeage is a French winemaking term for the traditional stomping of grapes in open fermentation tanks.

## Secondary fermentation and bulk aging

During the secondary fermentation and aging process, which takes three to six months, the fermentation continues very slowly. The wine is kept under an airlock to protect the wine from oxidation. Proteins from the grape are broken down and the remaining yeast cells and other fine particles from the grapes are allowed to settle. Potassium bitartrate will also precipitate, a process which can be enhanced by cold stabilization to prevent the appearance of (harmless) tartrate crystals after bottling. The result of these processes is that the originally cloudy wine becomes clear. The wine can be racked during this process to remove the lees.

The secondary fermentation usually takes place in either large stainless steel vessels with a volume of several cubic meters, or oak barrels, depending on the goals of the winemakers. Unoaked wine is fermented in a barrel made of stainless steel or other material having no influence in the final taste of the wine. Depending on the desired taste, it could be fermented mainly in stainless steel to be briefly put in oak, or have the complete fermentation done in stainless steel. Oak could be added as chips used with a non-wooden barrel instead of a fully wooden barrel. This process is mainly used in cheaper wine.

Amateur winemakers often use glass carboys in the production of their wine; these vessels (sometimes called *demijohns*) have a capacity of 4.5 to 54 litres. The kind of vessel used depends on the amount of wine that is being made, the grapes being used, and the intentions of the winemaker.

## Malolactic fermentation

Malolactic fermentation occurs when lactic acid bacteria metabolize malic acid and produce lactic acid and carbon dioxide. This is carried out either as an intentional procedure in which specially cultivated strains of such bacteria are introduced into the maturing wine, or it can happen by chance if uncultivated lactic acid bacteria are present.

Malolactic fermentation can improve the taste of wine that has high levels of malic acid, because malic acid in higher concentration generally causes an often unpleasant harsh and bitter taste sensation, whereas lactic acid is perceived as more gentle and less sour.

The process is used in most red wines and is discretionary for white wines.

°Brix is one measure of the soluble solids in the grape juice and represents not only the sugars but also includes many other soluble substances such as salts, acids and tannins, sometimes called Total Soluble Solids (TSS). However, sugar is by far the compound in greatest quantity and so for all practical purposes these units are a measure of sugar level. The level of sugar in the grapes is important not only because it will determine the final alcohol content of the wine, but also because it is an indirect index of grape maturity. Brix (Bx for short) is measured in grams per hundred grams of solution, so 20 Bx means that 100 grams of juice contains 20gm of dissolved compounds. There are other common measures of sugar content of grapes, Specific gravity, Oechsle (Germany) and Beaume (France). The French Baumé (Be° or Bé° for short) has the benefit that one Be° gives approximately one percent alcohol. Also one Be° is equal to 1.8 Brix, that is 1.8 grams of sugar per one hundred grams. This helps with deciding how much sugar to add if the juice is low in sugar: to achieve one percent alcohol add 1.8 grams per 100 ml or 18 grams per liter. This process is called chaptalization and is illegal in some countries (but perfectly acceptable for the home winemaker.)

Generally, for the making of dry table wines a Bx of between 20 and 25 is desirable (equivalent to Be° of 11 to 14.)

A Brix test can be run either in the lab or in the field for a quick reference number to see what the sugar content is. Brix is usually measured with a refractometer while the other methods use a hydrometer. Generally, hydrometers are a cheaper alternative. For more accurate use of sugar measurement it should be remembered that all measurements are affected by the temperature at which the reading is made. Suppliers of equipment generally will supply correction charts.

Volatile acidity test verifies if there is any steam distillable acids in the wine. Mainly present is acetic acid but lactic, butyric, propionic and formic acids can also be found. Usually the test checks for these acids in a cash still, but there are new methods available such as HPLC, gas chromatography and enzymatic methods. The amount of volatile acidity found in sound grapes is negligible, since it is a by-product of microbial metabolism. It's important to remember that acetic acid bacteria require oxygen to grow. Eliminating any air in wine containers as well as a sulfur dioxide addition will limit their growth. Rejecting moldy grapes will also prevent possible problems associated with acetic acid bacteria. Use of sulfur dioxide and inoculation with a low-V.A. producing strain of *Saccharomyces* may deter acetic acid producing yeast. A relatively new method for removal of volatile acidity from a wine is reverse osmosis. Blending may also help—a wine with high V.A. can be filtered (to remove the microbe responsible) and blended with a low V.A. wine, so that the acetic acid level is below the sensory threshold.

### **Blending and fining**

Different batches of wine can be mixed before bottling in order to achieve the desired taste. The winemaker can correct perceived inadequacies by mixing wines from different grapes and batches that were produced under different conditions. These adjustments can be as simple as adjusting acid or tannin levels, to as complex as blending different varieties or vintages to achieve a consistent taste.

Fining agents are used during winemaking to remove tannins, reduce astringency and remove microscopic particles that could cloud the wines. The winemakers decide on which fining agents are used and these may vary from product to product and even batch to batch (usually depending on the grapes of that particular year).

Gelatin has been used in winemaking for centuries and is recognized as a traditional method for wine fining, or clarifying. It is also the most commonly used agent to reduce the tannin content. Generally no gelatin remains in the wine because it reacts with the wine components, as it clarifies, and forms a sediment which is removed by filtration prior to bottling.

Besides gelatin, other fining agents for wine are often derived from animal and fish products, such as micronized potassium caseinate (casein is milk protein), egg whites, egg albumin, bone char, bull's blood, isinglass (Sturgeon bladder), PVPP (a synthetic compound), lysozyme, and skim milk powder.

Some aromatized wines contain honey or egg-yolk extract.

Non-animal-based filtering agents are also often used, such as bentonite (a volcanic clay-based filter), diatomaceous earth, cellulose pads, paper filters and membrane filters (thin films of plastic polymer material having uniformly sized holes).

[Information from Wikipedia.](#)

## A tale of the gander that got the goose—*permaculture-wise*

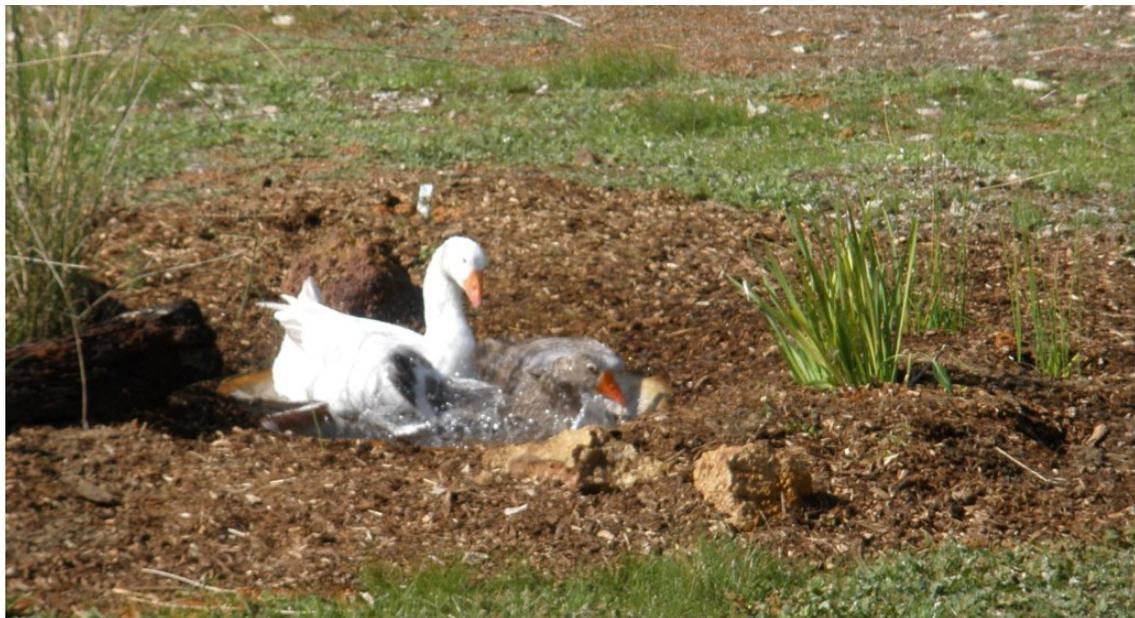
I'll give a brief outline of how all this came about:

12 months ago I inherited a goose, rooster and hen from neighbours who moved away. As the goose's behaviour was getting worse I thought she needed a mate. I knew Bernie had geese from when I did my Permaculture Design Course (PDC) in October 2008, so I emailed him and asked if he had a spare gander. He obliging brought me a gander, only to discover that the "goose" I had was, in fact, a gander! So he went home and swapped gander for goose. They took a couple of days to sort themselves out but hit it off pretty quickly and on 22nd August she laid her first egg, so we had to get "cracking" and make her a sheltered nest and separate them from the chickens, as they were starting to bite the chooks who retaliated by stopping laying! We didn't want to blow the budget providing them with all the "goose essentials" any newly weds require, so a bit of scouting around our property resulted in the following:

Here's the email to Bernie:

Yesterday Gary and I put in place a small pond and landscaped around it with plants, rocks, logs and wood mulch. We had great fun and the geese watched with curiosity. We had to go out in the afternoon and when we returned the water level had dropped about 75mm (Oh no! I thought. A leak!) Not so, goose feathers, flattened mulch and CHEWED plants! They obviously had a great time "testing the water" while we were out. When we let them out this morning they went straight to the pond and frolicked for ages.

Total cost of landscaping exercise? **NIL!**



In fact, the entire goose project has cost us very little, viz:

1. The pond was a pressie from Mark Harrison (PDC Oct 2008 & fellow Cert III student) which he scrounged off council pick up in Nedlands 12 months ago when we got the goose (read gander!) (This pond is much larger than the blue "bowl" which came with him.)
2. Plants (*juncus subsecundus* and *juncus pallidus* plus another native whose name escapes me) which were all in pots in other parts of our garden PLUS 5 plants from Shire's Tree Canopy & Understorey Program)--**FREE**

3. Two nicely shaped and weathered logs from our block--**FREE**
4. Tree mulch from trees we had removed from street verge after storm had brought them down plus mulched palms which they already had in their truck from job done prior to ours--**FREE**



#### Goose enclosure cost analysis:

1. Chicken wire fencing and star pickets to separate geese from chickens were leftover from other projects--**FREE**
2. Gate separating chickens and geese was from Karen Lee's property (PDC Oct 2008 & fellow Cert III student)--**FREE**
3. Security screen door from goose enclosure into paddock: \$1 from neighbour's garage sale June 2009 (I *knew* it'd come in handy!)
4. Kopper's logs for door posts--**FREE** from neighbour's recent yard clean up.
5. Hinges and barrel bolt--**FREE** from Gary's biscuit tin of "better-save-these-items-as-they-may-come-in-handy-one-day" --**FREE**
6. One bag of rapid set cement to cement posts in--**\$7.39**
7. Shelter for geese was originally housing over bore and was already here--**FREE**
8. New shelter over bore was old dog kennel on our dam area and was also already here. (Gary knocked the bottom out of it and it fitted over the bore perfectly. The bottom was sawn in half to enclose the bottom sides of goose shelter as bore cover didn't go all the way to the ground.)--**FREE**
9. Motor cycle tyre used for basis of nest was already here--**FREE**

Goose and gander--**FREE**

**GRAND TOTAL** of geese, goose enclosure and shelter, landscaped recreation area and pond:  
**\$8.39**

A more perfect example of Permaculture I couldn't find! It has inspired me to look at other projects I want to do around here and see what else I can use that we already have ...

Text and photos by Kerry Rowles.

## HEALING THE BODY

### Women's health in the 21st Century (part 2)

#### Menopause

Interestingly in some cultures they do not have a word for Men-O-Pause and in those cultures {when a woman reaches the age that in western culture she is seen as Menopausal} she is revered as a Wise Woman! Also interesting to note is that in those cultures eg: North American Indian, they all use herbs which help the female reproductive system and alleviate the symptoms of Menopause.

It should be seen as a time of celebration and seen as a liberation, a moving on to the next level. There are psychological factors involved here in our Western Culture, tied up in the Beauty Myth and belief that after Menopause Women are no longer sexual beings. We need to adopt a different attitude and start to instill that attitude in women of all ages. To combat the various symptoms which may occur like hot flushes, and depression there are a number of very useful herbs:

Black Cohosh  
Blue Cohosh  
Chaste Berry  
Damiana  
Hops  
Jasmine  
Licorice  
Oats  
Saw Palmetto  
Shatavari  
St. Johns Wort  
Wild Yam  
Xian Mao



Mother wort can added as a Cardiac tonic if there are palpitations, stress or high blood pressure. Also eating a diet high in plant Oestrogens like soy products is helpful {eg Japanese diet or vegetarian diet}

I would like to now expand on two of the herbs I have mentioned for many conditions throughout this article, Chaste Berry and Shatavari.

#### Chaste Berry - Vitex agnus castus

Also known as Monks pepper, so named as the monks in monasteries would use this herbs, which looks like peppercorns to lower their Libidos. The name Chaste tree also implies that the herb keeps one chaste. It is a deciduous tree that grows to 7m. The berries have an anti- androgenic effect and inhibit male sex hormones. On the other hand they have a progesterogenic effect in women, acting on the pituitary gland, which then balances oestrogen and progesterone production.

As seen through this article Chaste berry has many uses for the female reproductive system.

Parts used: Berries

Properties: Hormone normaliser, Tonic for the female reproductive system.

Uses: It helps normalise the balance of hormones in women and many of my female patients test positive through kinesiology on this herb. To recap it is good for PMT, dysmenorrhea, Ammenorrhoea, Metrorrhagia, Menorrhagia, Infertility, Menopause. It can be an aphrodisiac for women by getting their hormones in balance and an anaphrodisiac for men. It also has been used to increase

breast milk production. I think we are blessed to have such a wonderful herb for our use.

Shatavari- Asparagus racemosus.

In Ayurvedic medicine it is known as “who possess a hundred husbands “so Look Out Men!!!!!!” It has an amazing rejuvenitive effect on the Female reproductive system. In Chinese medicine {TCM} it is called “Tian Men Dong “



Parts Used: The root

Actions /Used for: Cancer, convalescence, coughs, chronic fevers , dehydration, diarrhea, debility of the female reproductive organs, herpes, hematemesis, hyperactivity, infertility, impotence, leucorrhea, lung abscess, menopause, sexual debility, stomach ulcers.

Uses: What can I say, a remarkable herb that has an effect on all tissue elements and a very pronounced effect on the reproductive organs. If you are having trouble getting pregnant then take this herb and if you are taking this herb and don't want to get pregnant, then take Extra care while using it!

It is the main herb in Ayurveda for the female reproductive system. It can be used externally for muscle spasms, stiffness and stiff joints.

Shatavari is very nourishing and can be eaten as a food. It cleanses the blood and nourishes it, increases milk production, semen production and nurtures mucus membranes. As it supplies many female hormones it is of good use for menopause or for anyone who has had a hysterectomy.

Another important factor in all of this which I would be remiss in not mentioning is the Liver. The Liver filters our blood and stores Hormones among its 500 other functions. In this day and age with all the chemicals in the Environment as well as daily stresses, Alcohol, recreational drugs that people indulge in it is very necessary to treat and look after the Liver. So a few herbs that would be useful St. Mary's Thistle, Bupleurum, Globe Artichoke, Andrographis, Schisandra and Tumeric.

Happy Herbing  
Dipaunka



Part 1 of this article was in the August issue of this newsletter.



## Possoms to climb over dangerous roads

**A PhD student is studying the use of possum ropes to combat the high number of road kills in the Busselton area as part of a massive road ecology project being undertaken by The University of Western Australia's Wildlife Research Group.**

Kaori Yokochi's PhD project sees her erecting rope bridges over roads in the South-West region to determine their effectiveness in reducing possum road kills and restoring gene flow between populations separated by roads.



A Western Ringtail Possum

Ms Yokochi says roads are one of the main threats to possums in the south west and that rope bridges will hopefully enable them to cross roads safely.

This is the biggest road ecology project ever undertaken in Western Australia and the rope bridges are the first to be trialled in WA.

“Studies over east have shown that possums use the rope bridges but they haven't shown that the gene flow is actually restored,” Ms Yokochi says.

“If the rope bridges are not restoring gene flow, then there's not really any point in using them to restore populations.

“If they are useful, then any new road construction should include rope bridges and we will be recommending that to Main Roads (WA).”

There are currently 44 fauna underpasses in Western Australia.

Fauna underpasses help larger animals avoid roads but most possums, particularly the threatened Western Ringtail Possum, don't use them, with previous studies suggesting they prefer to traverse through trees.

The possums may feel unsafe using an underpass where there is only one entrance and one exit due to the threat of predators such as foxes using them as prey traps.

Initial trapping will be carried out once a month to calculate populations in the area and fit radio-collars on the possums.

The rope bridges will go up in August or September at locations that have caused the fragmentation of possum populations.

Ms Yokochi will be carrying out genetic analysis and paternity testing to see if there is breeding between the disconnected communities, and sites will have cameras and chip readers to help determine if the animals are using rope bridges to reach the other side to breed.

Road kill numbers from before and after the rope bridges are erected will be compared to see if they are reduced.

“We need roads but unfortunately it is having a negative impact on the wildlife,” Ms Yokochi says.

“Hopefully this project will help us find out if possum ropes will help.”

For more information, please contact Ms Yokochi on 0439 969 242.

For more information on the Road Ecology Linkage Project, please contact Roberta Bencini on 6488 2521.

*Written by Rachael Glasgow Wednesday, 26 May 2010 14:07*



## Simple solution for sowing fine seeds – seed tape

Have you ever had problems sowing some of the fine vegetable seeds? You try to spread them evenly and at the correct distance, but no success. Well, do we have a simple solution for you? Make your own seed tapes.

1. You can use newspaper, toilet paper, a brown paper bag or any other paper that is biodegradable. Use paper that is unbleached and non-scented. Cut paper into small strips to the length you require. It is easier to plant out shorter strips.
2. Make a thick paste of flour and water. Dab the flour paste onto the paper strips at the prescribed planting distance. Place a seed on each paste drop.
3. Allow the flour paste to dry. Once dry you are ready to plant. Carry the strips carefully into the garden.
4. Lay the strips down in the shallow furrows you have prepared in the soil. Spray the seed tapes with a heavy mist of water and then cover with soil.



Information kindly provided by Sharryn and Ken Turrell.

## Tackling termites with technology

**TERMITE infestations may become a thing of the past with the development of a new environmentally friendly device by researchers at Edith Cowan University**

Taking advantage of a variety of advanced acoustic technologies, bugFinder is able to detect and monitor termite behaviour when placed near surfaces where termites traditionally dwell.



The new device may prevent soldier termites from wreaking havoc in homes.  
Image courtesy Professor Adam Osseiran.

Project leader and associate professor at ECU's School of Engineering Adam Osseiran says bug-Finder has massive potential and is unique in its design.

"It's a powerful tool that is user friendly and easy on the environment.

"It consists of a listening device constantly monitoring the sound generated by the termites. When detected, this sound is then amplified and processed by the device which selectively recognises characteristic sound generated by termites and instantly signals their presence.

"The acoustic sound recognition algorithm operates in both time and frequency domains allowing a precise analysis of the acquired information.

"When termites are detected, an alarm sound is generated, a message is wirelessly sent to a central station and demographic data is stored on board and via a SD card for subsequent analysis and action."

Importantly, the device is versatile and low-power, making it more environmentally friendly than traditional means of detecting and removing termite infestations.

"In its current version, the device is the size of a mobile phone and weighs just 120g," says Prof Osseiran.

"Also, a future version of the device will generate a signal that mimics that of threatened soldier termites when attacked. This generated signal acts as a natural deterrent alerting the worker termites to retreat back to where they came from therefore eliminating the need to kill using chemicals, which is obviously better for the environment.

"The device will also have the ability to be powered by solar energy for outdoor use. Its wireless range allows it to communicate over tens to hundreds of square kilometres which opens the door for much broader applications such as environmental monitoring or bio-security."

With termite damages estimated to cost Australian home-owners up to \$1 billion each year, Prof

Osseiran says there is great opportunity to commercialise bugFinder because of its relatively low cost and low power usage.

“The device can be rapidly made available to the housing and industrial building markets. Many individuals have shown interest in purchasing the device for their own houses, but we are yet to select major players in Australia through which bugFinder can be distributed to the wider market.”

*Written by Phillip Broom Wednesday, 18 August 2010 16:30*

Information from Science Network WA website

<http://www.sciencewa.net.au>



## World phosphorus shortage looms

Phosphate rock mining is predicted to reach a peak in 2033 and then begin to decline, pushing up fertiliser prices.

Dr Eric Craswell, from the Australian National University, says phosphorus can't be synthesised, and in the future it may need to be recycled or found in other sources.

He's told a World Soil Science Congress in Brisbane that Australia's paddocks are naturally deficient in the mineral.

"Intensive agriculture demands a lot of phosphorus, because grains concentrate phosphorus from the plant and then that's harvested, so you need to replace it," he says.

"It's a major nutrient. You used to use guano and bones of animals."

One of the ways to increase the supply of phosphorus for fertiliser is to recycle it from human waste.

Canberra has a sophisticated sewage treatment works, plus a blast furnace, to create a phosphorus rich, dry fertiliser.

Dr Craswell says it's called agri ash.

"In the case of Canberra, it's an inland city, and you have a real concern about phosphorus getting into surface water in the inland waterways," he says.

"I think agri ash has got about 6 per cent phosphorus in it and a lot of calcium, which is very good for soils that are acid or acidifying."

ABC Rural - Tuesday, 03/08/2010

## Guerrillas in the Midst

### What on Earth is Guerrilla Gardening?

Bombs, guns, pitchforks, masks, false identities and missions under the cover of darkness... this ain't a warzone, or a bad Tom Cruise film, this is Guerrilla Gardening, and it's popularity is growing, both throughout Australia and the rest of the world! This is hardcore horticulture, full-on flora, seed sowing at its sexiest, plantings with purpose... and it's darned important. But what is it, why does it exist, who's involved, and, most importantly, were any Guerrillas harmed in the making of this story?



### Terrorism in Reverse

A Guerrilla is, by dictionary definition, "a member of an irregular, usually indigenous military or paramilitary unit operating in small bands in occupied territory to harass and undermine the enemy, as by surprise raids". Yup, I know what you're thinking... what the hell has this got to do with gardening? Have these Guerrilla Gardeners declared war on our weeds, or are they the "anti-plants"? Well, in essence, they have declared war... but it is a war on ugliness, on neglected public and private spaces, and an attempt to beautify and restore pride in the urban landscape. As Guerrilla Gardening Godfather Richard Reynolds explains it's all about "fighting filth with forks and flowers, and is essentially the illicit cultivation of someone else's land".

So why would they bother? Well, I guess, why wouldn't they? Where I used to live (in inner city Melbourne), there was a neglected block next door. By neglected, I mean this thing was an eyesore. It was an ex-petrol station, which, despite a massive road frontage, was never sold or developed. So it became a dumping ground for household waste, and seemed to harbor a breeding program of both shopping trolleys and feral cats. I lived in a rented bedsit, and thus had no garden of my own... not even a balcony or space for a potted plant. Often I would sit at my grubby window, gaze across at this deserted patch of land, and long to plant it out with some herbs, vegies, fruit trees... anything that I could tend to, enjoy, eat, and that would make my view a little more appealing. And it is this same want, to beautify public space, that drives many Guerrilla Gardeners. But it can be political as well.

### The Politics of Public Space

What is it about this style of gardening that makes it a "guerrilla" activity? Is there politics or revolution afoot? Is guerrilla gardening a modern day "love in", a "hippie objection to modernist filth" (as blogged by Kieran Bennett), or is it simply a mob of keen plant fans wanting to pretty the city? Well, to be honest, it's elements of all of these. Guerrilla gardeners generally work under the cover of darkness, organising "troop digs" and "actions" where keen guerrillas meet and transform an ordinary looking public (or private) space with trees, shrubs, annuals and more. They engage in on-going watering, maintenance and rubbish removal on planted sites, much of this also done under the cover of darkness. The general public are often encouraged, by signage located in the gardens, to water a guerrilla garden as they pass or collect rubbish if required. So,



what's the big deal? A couple of people whacking in some plants... where's the harm in that?

Well, for one, it is illegal. Generally, the land that is being cultivated belongs to business, government or private parties, and, as we all know, mucking about with someone else's property is unlawful. The word trespass springs immediately to mind. Guerrilla Gardeners should, at all times, be mindful of this, and, unless troops obtain permission to use and cultivate the land, they could end up in real strife. That said, there have been many examples of Guerrilla Gardening actions that have targeted derelict, unused or unwanted land successfully, and without prosecution. Many of these have been areas like median strips, road verges, roundabouts, and neglected areas of public housing and utilities (think train stations and bus stops).

But, as extreme as it all may appear, there are certain "rules" Guerrilla Gardeners are encouraged to abide by... a code of ethics if you like. For one, all are encouraged to leave the land they target in better condition than when they found it. This means free of weeds and rubbish, with the soil having been improved (organically of course) and appropriate plantings in place (more on that later). The land should be unused when targeted, and likely to remain unused for the duration of the vegetation's lifespan, and, most of all, the garden should look nice, and be fairly low maintenance.

But does the garden have to be useful? Well, there are a few trains of thought on this, with many Guerrillas suggesting the improvement in aesthetics of drab and neglected urban spaces through reclaimed gardens is a useful public service. Other Guerrilla Groups are all about productive gardens; those that provide the gardeners and the general public with vegetables, herbs and fruit, and act to improve the 'feel', 'vibe' and 'livability' of an urban space. Yup, it's a contentious issue, and one that pops up fairly frequently in Guerrilla Gardening discussions.

### Weed Warriors

Okay, so I'll admit it, I'm intrigued by Guerrilla Gardening... in fact, I find it downright appealing! That said, I do have issues with the process, and here they are: I have enormous concern regarding the plant selections of Guerrilla Gardeners, both here and overseas. Sure, some of the groups are planting out edibles, but the bulk of them advocate the use of "low maintenance" "drought tolerant" plantings, those plants that will survive with a minimum of care and attention. Nothing wrong with that in theory, but I think a lack of horticultural knowledge and perhaps a limited understanding of broader global issues may see a significant number of these groups planting and spreading environmental weeds.

Consider this: 65% of invasive plants in Australia have originated from ornamental horticulture – that is, they have jumped from the backyard to the bush. Why have they been so successful? Well, many of them were sold as low maintenance, drought tolerant plants, those tough as boots garden varieties that even those with the brownest thumbs couldn't kill... exactly what many Guerrilla gardening groups look for in their suite of plants. So, while many of these groups may think they are doing the environment a favour, they may inadvertently be contributing to a whole world of weeds.

So, what would I do if I were a Guerrilla Gardener? I would mandate that all groups, cells, pods and digs of Guerrillas make their reclaimed spaces as useful as possible. By this, I mean plant suitable,



non-invasive edibles, and kick start some serious urban food forests... your suburb will thank you! If edibles are not appropriate, what on earth is wrong with planting locally native plants? These are plants indigenous to the area, are uniquely suited to the climate, topography, soil and rainfall, enhance the character of the local area, and look fantastic. Hell, you may even create some habitat and support biodiversity along the way! All gardeners should be totally aware of all local, state and national invasive plant lists, and ensure that they are not adding to the issue.

### Sowing the Seeds of Dissent

Don't fancy skulking around under the cover of darkness, planting illegal gardens on public land but still want to make a difference? As Kurt Cobain once said "load up on guns, and bring your friends"... seed guns that is! Guerrilla Gardeners worldwide have been making and launching seed guns and bombs since the seventies, and, while they may all sound a bit violent, they are actually the complete opposite. Seed bombs and guns are made of a mixture of clay, organic compost, locally native plants seeds and a touch of water, shaped by hand and left to dry out and harden. These "weapons of mass re-vegetation" are then tossed, by hand, into neglected spaces, degraded public land, and hard to plant sites. Over time, a proportion of the seeds will germinate; bringing beauty and plants to what was once an eyesore. There are stacks of references on the web that will tell you how to make them... and I have to say, it looks like fun!



Guerrilla gardeners aren't just a mob of extremists, hardcore hippies and tie-dyed treehuggers, they are an intriguing mix of the young and the old, the plant savvy and the beginners, the 'out there' and the elderly... all gardening for a common purpose: to bring a little bit more beauty into the urban landscape! And I reckon... good on 'em!

Want to learn more? Check these links out:

[www.guerrillagardening.org](http://www.guerrillagardening.org)  
[www.abc.net.au/7.30/content/2008/s2354714.htm](http://www.abc.net.au/7.30/content/2008/s2354714.htm)  
[www.laguerrillagardening.org](http://www.laguerrillagardening.org)  
[guerrillagardening.org/community/index.php](http://guerrillagardening.org/community/index.php)  
[heavypetal.ca/archives/2007/03/how-to-make-seedballs](http://heavypetal.ca/archives/2007/03/how-to-make-seedballs)

### Photos

- 1 A productive tomato patch in an unused strip of suburbia – Melbourne – [www.lastappetite.com](http://www.lastappetite.com)
- 2 A Guerrilla Garden smack in the middle of London, complete with sunflowers!
- 3 A Guerrilla Garden, bringing life to the city, and looking top notch after two years! – <http://greenerloudoun.com>
- 4 Shoots, roots and leaves....literally! A seed gun, the ultimate weapon in fighting urban ugliness! [www.alrdesign.com](http://www.alrdesign.com)

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 Sustainable Gardening Australia, February 3rd, 2010  
<http://www.sgaonline.org.au>

## Launch of Bandicoot Refuge Project

The Department of Environment and Conservation (DEC), in conjunction with Coastcare WA, is currently trialling artificial refuges for a small and vulnerable population of quenda, or southern brown bandicoot, along Challenger Beach coastal reserve.

Ground-dwelling mammals such as quenda frequently find refuge in logs and fallen trees and the removal of this woody debris in recent years has been linked to the decline of many of these mammals.

Launched in April, the Bandicoot Refuge Project observed, through radio tracking, that quenda took refuge in rabbit burrows to avoid their predators. However, there was little research conducted into artificially created ground refuges providing a long-term solution.

The primary aim of the project is to determine whether quenda will use artificial refuges in a small urban reserve and to determine whether quenda activity will increase in areas immediately adjacent to the artificial refuges.

DEC Regional Ecologist Geoff Barrett said that the concept for the project and partnership was brought to his attention by Perth Region NRM's South Metro Coastcare Officer Craig Wilson in September 2009.

"Craig Wilson contacted me to discuss the possibilities of a project to assist a small population of quenda along Challenger Beach," he said.

"We know that small populations of mammals are vulnerable to local extinction following fire and predator activity, so we thought about a trial of terracotta pipes as potential refuges.

Geoff said that the main concern was whether quenda would use the refuges as they were used to brush hides constructed within dense, low vegetated areas.

"What was interesting is that the refuges were immediately occupied," he said.

"During the hotter weeks in December the refuges appeared to have been abandoned, so we had some help from GreenCorps volunteers who piled sand and brush over the refuges to bring down the temperature. This seems to have worked as the quenda started using them again.

Concrete chambers have since been added to protect the pipes, and quenda diggings are being monitored to gauge activity, which has remained constant to date.

"We intend to monitor the refuges for another year and if they continue to be used by quenda we would like to see whether constructing refuges will encourage quenda to move into patches of urban bushland that are not yet occupied," he said.

Conclusions drawn since the implementation of the Bandicoot Refuge Project confirm that quenda will use artificial refuges constructed from terracotta pipes. However, these refuges may prove too hot during the summer months, a problem that may be overcome by partially burying the pipes.

Quenda of all ages appear to be using the refuges but their activity within an area does differ between sites with and without artificial refuges.

For more information about the Bandicoot Refuge Project, please contact Geoff Barrett on 9423 2907 or email [geoff.barrett@dec.wa.gov.au](mailto:geoff.barrett@dec.wa.gov.au)

Information from *Environment and Conservation News*

## What's the buzz, tell me what's a'happening?



### Permaculture Association of Western Australia (PAWA)

The Permaculture Association of Western Australia (PAWA) aims to inspire and help people learn and use permaculture in their lives by providing you with regular e-news, magazine publications and free entry to presentations. Membership fees enable PAWA to deliver these services as well as further develop its events calendar, website and other permaculture opportunities.

### Upcoming Events

#### October 2010

##### 1 - 2 October

Royal Show Permaculture Backyard - more information available on PAWA events page.

##### 3 October

PAWA's first new local permaculture group meeting - Northern APE's (Active Permaculture Enthusiasts) - Contact [permaculturewest@gmail.com](mailto:permaculturewest@gmail.com) This e-mail address is being protected from spambots. You need JavaScript enabled to view it if you are in the Stirling Council region or nearby and are interested in a hands on Gardening/Community/Earth Care Group.

##### 11 - 15 October

Permaculture Institute of WA (PIWA) is running a Teacher Training Course in Lansdale (\$250) - for more information view the flyer.

##### 16 October

PAWA Committee Meeting and People Care Training - Please contact PAWA if you would like to be involved in any way with the PAWA Committee.

##### 30 October

PAWA Seed Swap Fair and AGM (in planning)

#### November 2010

##### 20 November

PAWA Committee Handover Meeting (in planning)

#### December 2010

##### 4 December

PAWA Christmas Event (in planning)

### Why Not Register for Permablitz Perth!

<http://permaculturewest.org.au/permablitzperth>

### Check out the latest on the PAWA website

<http://permaculturewest.org.au>

### Have a read of the fact sheets presented at Perth Royal Show - Sustainable Permaculture Backyard

<http://permaculturewest.org.au/resources>

## PERMACULTURE COURSE

with Jeff Nugent  
at the Sustainable Agriculture Research Institute



Permaculture (permanent agriculture) is a system of agriculture that combines landscape design with perennial plants and animals in such a way that each element supports and enhances each other element. It offers a safe, sustainable agriculture for town and farm. In an age of famine, poisons, erosion, population explosion, dwindling fuel supplies and receding forests, it promises a low energy, high yielding agriculture for the whole world.

Jeff Nugent has over twenty five years experience in teaching Permaculture Design and a longer history as a Permaculture Designer. He is coauthor of the book *Permaculture Plants a selection* and author of *Permaculture Plants Agaves and Cacti*. He is currently working on other *Permaculture Plants* books and a futuristic novel. He has worked in four continents and has taught courses in Australia, North America and Africa.

The property, 12 km from Nannup, has been developed along Permaculture lines for over 30 years and will provide participants with many visual examples of Permaculture in action.

### Introduction to Permaculture Course: Mon 6<sup>th</sup> - Fri 10<sup>th</sup> December

- offers a good general overview of Permaculture principles with hands on experience.
- students will see a Permaculture system in action and will be involved in design and implementation projects.
- suited to those wishing to design their own properties.
- Completion of this course counts as part 1 of SARI's 2 part Permaculture Certificate Course.

Cost of course: \$550 (including food and camping space\*\*)

(\$50 discount for students)

(\$50 earlybird discount for people booking before September 1st)

send \$250 deposit.

#### BOOK EARLY TO ENSURE A PLACE

Bookings and Enquiries to (Please give your contact details):

Jeff Nugent P.O. Box 10 Nannup, W. Australia 6275, Telephone (08) 97561271

email: [jeff@permacultureplants.net](mailto:jeff@permacultureplants.net)

\*\* Accommodation at nearby chalets is possible at extra cost for those not wishing to camp. Courses can be run at other dates or locations and tailored to suit a groups special needs.

Visit us on the web: [www.permacultureplants.net](http://www.permacultureplants.net)

## Links

### Biodynamic

Biodynamics2024—biodynamic farming and gardening in Australia  
<http://biodynamics2024.com.au/>

Eden Valley Biodynamic Farm Dumbleyung in southern Western Australia  
<http://www.edenvalleybiodynamic.com.au/>

Highvale Biodynamic Orchard – Pickering Brook  
<http://www.highvale.com/home.html>

### Bushtucker

Bush Food Network  
<http://www.bushfood.net>

Bush Tucker Plants  
<http://www.teachers.ash.org.au/bushtucker/>

Yelakitj Moort Nyungar Association  
<http://www.nyungar.com.au/bushtucker.html>



### Community Gardens

Australian City Farms and Community Gardens Network  
<http://communitygarden.org.au/>

Glen Forrest Community Garden  
<http://groups.google.com/group/glenforrestcomgarden?hl=en>

Growing Communities WA  
<http://www.wacgn.asn.au/>

### Compost and Soils

Eureka Organic Compost  
Address: 4040 West Swan Rd, West Swan, WA, 6055  
Phone number: (08) 92745526

From the Soil Up  
<http://www.fromthesoilup.com.au/>

Green Life Soil Co.  
Family business promoting the practical use of Permaculture and Organic Gardening. They have developed several specialist soil mixes designed for improving Perth's impoverished soils

<http://www.greenlifesoil.com.au/index.htm>

178 Farrall Road, Midvale WA  
Trading hours: 8:30 am – 5:00 pm. Closed Wednesday.  
Ph: 9250 4575

**Herbs**

Dipaunka Macrides—Living as a Herbalist

[www.theherbalist.com.au](http://www.theherbalist.com.au)

[www.groveofpan.com.au](http://www.groveofpan.com.au)

Mobile: 0412180796

Plants for a Future – edible, medicinal and useful plants for a healthier world

<http://www.pfaf.org/index.php>

The Amazon Plants – Tropical Plant Database

<http://www.rain-tree.com/plants.htm>

**Nurseries**

Tass1Trees – specialising in fruiting plants – Fruit Trees

<http://www.tassitrees.com.au/>

Zanthorrea Nursery

<http://www.zanthorrea.com/>

**Organics**

Aussie Organic Gardening – a gardening blog by Lyn Bagnall

<http://aussieorganicgardening.com/>

Mundaring Organic Growers

<http://www.mundaringorganicgrowers.net/>

Nutritech Solutions – products for organic gardening

<http://www.nutri-tech.com.au>

**NEW**

The Green House Organic – provides organic seedlings

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

The Organic Growers Association of WA – some good links and information

[www.ogawa.org.au](http://www.ogawa.org.au)

**Permaculture / Living simply**

City Farm

[www.cityfarmperth.org.au](http://www.cityfarmperth.org.au)

Down to Earth—preparing for the future by relying on the past

<http://down---to---earth.blogspot.com/>

Fremantle Environmental Resources Network (FERN)

[www.fern.org.au](http://www.fern.org.au)

Hills Local Permaculture Group

<http://permaculturewest.org.au/hlpg>

Peacetree Permaculture & Edible Landscapes (PPAEL)

<http://www.peacetreepermaculture.com.au/>



## Links

Permablitz Melbourne

<http://www.permablitz.net/>

Permaculture Design – Pathways to Sustainable Living

<http://www.permaculturepathways.blogspot.com/>

Permaculture Power – spreading the permaculture word

<http://permaculturepower.wordpress.com/>

Permaculture Research Institute of Australia

[www.permaculture.org.au](http://www.permaculture.org.au)

Dr Ross Mars - permaculture Designer, Teacher, Author, Consultant.  
Candlelight Farm and Candlelight Trust

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

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

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

Water Installations and Greywater Reuse Systems - greywater and rainwater tank installations, manufacturer and consultant.

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

[www.greywaterreuse.com.au](http://www.greywaterreuse.com.au)

Sustainable Agriculture Research Institute – Jeff Nugent **NEW**

[www.permacultureplants.net](http://www.permacultureplants.net)

Sustainable Alternatives – Bernie and Rose Elsner's web site

[www.sustainablealternatives.com.au](http://www.sustainablealternatives.com.au)

The Worm Shed – information about worms and worm farms

[www.wormshed.com.au](http://www.wormshed.com.au)

## Recycling

There is an email list for locals to pass on unwanted items or to find items all for free – Mundaring Shire Freecycle. You have to join the yahoo group to be able to post and receive notices.

<http://groups.yahoo.com/group/FreecycleMundaringShire/>

## Seed Savers

Diggers Club—heritage seeds

[www.diggers.com.au](http://www.diggers.com.au)

Seed Savers' Network

<http://www.seedsavers.net/>

The Drylands Permaculture Nursery and Research Farm

<http://www.permaculturenursery.com.au/>

Yilgarn seeds in Geraldton  
Part of Seed Savers Network

### **Suppliers**

Greenway Enterprises  
Horticultural, landscape and landcare tools and equipment  
21 Tacoma Cct  
Canning Vale WA 6155  
(08) 6258 0333

Landmark – wide range of products, including multigrow  
<http://www.landmark.com.au/>  
32 Farrall Road, Midvale WA

### **Sustainability**

Environment House—Bayswater  
<http://environmenthouse.org.au/index.php>

Perth Solar City  
[www.perthsolarcity.com.au](http://www.perthsolarcity.com.au)

### **Miscellaneous**

A Frog Pond  
<http://afrogpond.com/>

Eastern Metropolitan Regional Council  
[www/emrc.org.au](http://www/emrc.org.au)

Ecological Agriculture Australia Association  
<http://www.ecoag.org.au/www/>

Silver Tree Steiner School  
[http://silvertree.wa.edu.au/index.php?option=com\\_frontpage&Itemid=1](http://silvertree.wa.edu.au/index.php?option=com_frontpage&Itemid=1)

Slow Food - WA  
<http://slowfoodperth.org.au>

Soul Tree Organic Store and Café  
<http://www.thesoultree.com.au/index.html>

Shop 6, 3-5 Railway Parade  
Glen Forrest

Swan Hills LETS System— Local Exchange Trading System  
<http://swanhillslets.org/public/>



# H LPG

## Contact us

Silvia and Rosemary

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(08) 9252 1237

## Subscription to mailing list

If you wish to **subscribe** to the H LPG mailing list please send an email to us with the word "*subscribe to newsletter*" in the subject heading, and provide your full name and brief message.

If you wish to **be removed** from this email list, please send an email to us with "*unsubscribe*" in the subject heading

Permaculture West

Permaculture Association of Western Australia (PAWA)

<http://permaculturewest.org.au/home>

## Hills Local Permaculture Group (H LPG)

The Hills Local Permaculture Group meets on the 3rd Saturday of the month, 9:30 for 10:00 start and finishing at 12:00.

The H LPG meets at the Silver Tree Steiner School in Parkerville.

Please bring a small plate of goodies for morning tea and a spare mug if you have one.

If you are interested in joining in, or have questions or suggestions, please contact Silvia or Rosemary by e-mail [silviarose88@yahoo.com.au](mailto:silviarose88@yahoo.com.au) or phone (08) 9252 1237.

Web: <http://permaculturewest.org.au/hlpg>

The H LPG meets at the  
**Silver Tree Steiner School in Parkerville**

The school is at **69 Beacon Road in Parkerville.**

If you are coming via **Great Eastern Highway** then turn into Seaborne Street (which becomes Byfield St and then Roland Rd).

If you are coming via **Toodyay Road** then turn into Roland Road.

