



# The Green Challenger

Official Newsletter  
of the  
Willunga Hillsface  
Landcare Group

**Willunga Hillsface Landcare Group**

Working towards a healthy, vibrant and sustainable Willunga Basin

Winter 2015

## You don't have to be barking to think trees really are like us...

Trees are more like us than you might think. They even have a pulse. They just operate over much slower time scales.

They might look static, but trees are dynamic living things - just on a different time scale to us. I read many years ago that if you wanted a tree to recognise you, you would need to sit quietly at its base for a week. Very Zen!

Yet trees are often seen as quiet observers. Their life spans of hundreds - and in some instances thousands - of years, and they will die at exactly the same location they were born.

It looks to us like trees have no eyes, ears, heart, voice, nerves, lungs, intestines, blood or brain. But that's not entirely true. Trees are more like us than we might think. Just not in a way we might expect.

I am still doubtful that a tree could turn into something that echoes JRR Tolkien's ambulant arborescent creations wandering around Middle Earth. However, the thought is intriguing. It implies that trees operate at very different timescales to ours. To fully grasp how active these organisms are it is worth readjusting our anthropocentric view on them.

### Rhythms of life

Today we measure their "breath" to calculate the carbon sequestration capacity of entire ecosystems. By "breath" I mean the process of

"taking in" gases from the atmosphere and "letting out" gases produced during their metabolism.

These analogies can be extended. Trees "can read the clock" -- by following entrained circadian cycles. Each tree species has its own "language", and can also talk several "foreign tongues", and they even call actively for help if necessary.

Here the release of highly specific chemical compounds facilitates communication with other trees, insects or fungi. Trees age, they defend themselves and react to injuries.

### They have a pulse

Indeed, despite missing a heart, trees do have a pulse. Not unlike the circadian rhythms in trees mentioned above, there are a number of processes that follow distinct oscillating cycles.

As many of these oscillations are a response to changes in environmental conditions, they typically follow a 24-hour cycle, such as opening and closing of stomata, but some can be annual, like deciduousness.

Another example for a diurnal (i.e. daytime) oscillation is the internal transport of water in tree stems.

VPD (vapour pressure deficit) describes how dry the atmosphere is. Clearly visible is how stem diameter contracts with increasing water use during the morning. During the evening and the night, when VPD is declining, tree water use is also de-

clining, while at the same time, the stem begins to expand again as it refills with water.

This process is driven mostly by light and the "dryness" of the atmosphere. Trees usually respond to changes in these environmental drivers by increasing their transpiration during the morning and decreasing it during the afternoon and into the night. We also record the accompanying dynamic change in diameter of the stem, producing a nice slow pulse.

### But what "organ" generates the pulse?

Nearly 100 years ago reports of this pulse first surfaced when forest scientists experimented with machines that aimed to measure the growth of stems.

After many tests, in 1932 Lester Henry Reineke finally invented the first precision dendrometer, which measures the girth of a tree stem. By using this instrument it quickly became clear that tree stems shrank during the day and expanded during the night based on changes in water stored in their tissues.

Lately researchers have found that the pulse is mostly generated by diameter fluctuations in the bark only. This was somewhat surprising, as traditionally it was thought that bark is totally decoupled from the transpiration stream of the tree. To

*Continued on Page 2*

## You don't have to be barking... *Continued from Page 1*

better understand this mysterious situation, we need to have a closer look at the bark.

### Quenching thirst

Bark can be divided into a dead (outside) and living (inside) section. The living section contains a transport system called phloem. The phloem relocates sugars – produced during photosynthesis in the leaves – to tissues, which require sugars for energy.

This source-to-sink direction of transport leads for most of the time to a downward directed stream of sugar-rich sap in bark towards the roots. The phloem uses water as transport medium for these sugars, and under certain conditions it appears that this water can be drawn out of the phloem into the transpiration stream of the stem.

Using theoretical modelling, plant biologists were able to show that these conditions are most likely to occur during the rapid increase of transpiration in the morning hours. During this time, the tension in the capillaries that transport the water upwards in the stem rapidly increases.

Just like a rubber band, too much tension would cause the water column inside the capillaries to snap, which has quite nasty consequences for the tree. In fact, this is how trees can die during drought.

To prevent this snapping, water from phloem is drawn into the capillaries, and the loss of water from the phloem causes the stem to shrink. Once the tension in the capillaries declines as a consequence of decreasing transpiration, the formerly lost water will be replaced back into the phloem, and so the stem expands again.

### Beneath the surface

All this might sound pretty sensible. However, the exact pathway of this water transfer has remained a mystery. And it is here where a recent study that I led comes into play.

My colleagues and I injected

fluorescent dye into phloem, and we were able to visualise the exact pathway of the water. We found that this water transfer takes place inside the wood rays that connect the phloem with the water-conducting capillaries. These are radially aligned living ray parenchyma cells that are present in countless tree species.

Our experiments have now established that phloem indeed is linked to the transpiration stream, acting like a sponge that gets saturated and squeezed continuously.

So, as it turns out, trees really are quite like us. You just have to sit next to one for a week to feel it.

**AUTHOR:** SEBASTIAN PFAUTSCH, RESEARCH FELLOW, TERRESTRIAL ECOSYSTEM FUNCTION & ENVIRONMENTAL CHANGE AT UNIVERSITY OF WESTERN SYDNEY

**DISCLOSURE STATEMENT:** SEBASTIAN PFAUTSCH DOES NOT WORK FOR, CONSULT TO, OWN SHARES IN OR RECEIVE FUNDING FROM ANY COMPANY OR ORGANISATION THAT WOULD BENEFIT FROM THIS ARTICLE, AND HAS NO RELEVANT AFFILIATIONS.

<http://theconversation.com/you-dont-have-to-be-barking-to-think-trees-are-like-us>



*"What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another."*

Letters, emails or feedback of any kind on anything in this Newsletter would be very welcome. If you have something you would like to see published, please contact me.

## Editorial

The invitation to attend a BBQ & farm walk on 14th June in the Autumn issue of the Green Challenger fell on deaf ears so to speak and a new arrangement will be made in Spring.

I wear an Akubra hat when I'm out most of the time and was disgusted to hear that the rabbit fur used in their manufacture will be imported. (Walking around Willunga at night with a suitable gun would produce a few pelts!)

According to an ABC Landline article the number of rabbit farms has seriously declined in Australia, mainly because of the cost involved inoculating the rabbits against the calicivirus.

According to Wikipedia calicivirus transmission occurs by direct contact with an infected animal and fomites. Unfortunately the virus can also be carried by the wind which may make the risk too great for breeders.

The Great Barrier Reef has been in the news recently so it was good to read a report in "Landcare in Focus" about farmers working to reduce Nitrous Oxide emissions.

North Johnstone and Lake Eacham Landcare group on the Atherton Tableland in far north Queensland developed practical methods to accurately calibrate farm irrigation equipment and pass knowledge on to fellow farmers.

The group's Russell Fry and Russell Molloy led extensive trials to gauge efficient use of water for irrigation for maximising production and minimising loss of valuable nutrients in run-off water...

With practical tools to monitor irrigation demand, and greatly improved efficiency, farmers have gained savings in energy and fertiliser costs, as well as providing gains for the environment, especially the Great Barrier Reef.

*The above is just a short part of this story. The full article is available for interested people online:*

[www.landcareonline.com.au/wp-content/uploads/2015/05/May-LiF.pdf](http://www.landcareonline.com.au/wp-content/uploads/2015/05/May-LiF.pdf)

# Regreen the Range Report

## Preliminary results of erosion works

In the previous newsletter the Landcare group have received from the AMLR NRM Board to remediate the erosion issues which are occurring on many of the creek systems across the hillsface.

With the rains that have fallen across the district recently it has been an opportune time to assess the construction works the Landcare group have undertaken within some of the creek systems across the hillsface.

The grade control structures which have been constructed on the lower reaches of the creek systems have proved successful in holding back and pooling the water and then slowly releasing the water to continue its journey across the basin. These structures have allowed the energy in the water to be dissipated, causing the sediment load to drop out of the water column whilst allowing water to still percolate through the structure, but with much less turbidity.

As well as the water being much cleaner having passed through the grade control structure, there is significantly less energy in the water, due to the slower velocity of the water, resulting in less erosion occurring down-stream of the structure.

The erosion works conducted on the upper reaches of the creek systems, located on top of the range, to arrest tunnelling erosion, have also proved to be effective. The works have not only captured moving sediment but it also appears, at this stage, to have significantly reduced the amount of tunnelling erosion.

Halting the tunnelling erosion required the collapsing of the roof structures of the tunnel and reinforcing the resulting gully with rock. The structure needed to be formed into a dish shape in order to have the water continue to flow in its original path but to percolate through the rock. This will result

in a similar situation to the grade control structures in that energy is dissipated from the flowing water resulting in sediment being deposited out of the water column, water staying on the property for a longer period of time, more water infiltrating the aquifers, meaning less water flowing across the land surface resulting in less erosion.

The landholders who have had the erosion control works are extremely pleased with results the Landcare group have been able to achieve on their properties. The work will result in a reduction of soil loss from their properties and over time halt the eroding of potential productive farm land.

WAYNE LAWRENCE

*Good work Wayne, but I think we could also add that the ocean benefits from this too, especially the sea grass and other life that inhabits the coastal region.*

Brian

## Willunga Environment Centre Inc.

Supported by Adelaide & Mt. Lofty Ranges Natural Resources Management Board

18 High St., Willunga. Phone: 8556 4188

Open Mon.–Fri. 10 am–3 pm,  
Sat. 9.30 am–1.30 pm.

### COMING EVENTS

#### August

*Friends of Aldinga Scrub presents Aldinga Scrub Talk and Tour on Sunday 23rd August @ 10 am Meet at Dover St car park.*

*Julian Craig presents Venomous Animals of South Australia on Tuesday 25th August @ 7 pm. Venue to be advised*

#### Free supper provided

*We are using the notice board on the outer Eastern side of the building and public and community groups are invited to use the board. Please drop your pamphlets, etc. into the centre for display, and start looking to see what is there!*

Registration essential:

[info@willungaenviro.org.au](mailto:info@willungaenviro.org.au) to register

## Queen Garnet: the super Plum

Move over kale and quinoa; the latest super food to hit the shops is a plum Queensland Government scientists accidentally bred a decade ago. There's been worldwide interest in the plum since trials on fat rats showed the antioxidant-rich fruit reversed a host of obesity-related health problems.

The global rights to grow and commercialise QG were sold to a company called Nutrafruit, owned by Bim Goodrich and five friends.

In 2010 Bim, a fifth-generation wool grower invested millions in stone fruit. He planted 75,000 trees of a new plum variety called Queen Garnet. With the harvest under way at the Goodrich's wool property, Warroo, which is the only commercial QG orchard in the world, all eyes are now on the six Queensland mates who bought the rights to commercialise the plum to see if

they can turn it into a multimillion-dollar global business.

In a bid to harvest at just the right time, Goodrich is in discussions with New Zealand company Delytics, which could potentially help find the optimal moment for fruit picking.

Crop development is about a year behind schedule due to issues of incompatible pollinators. However, after extensive re-budding with four different pollinators orchards are on track and set to produce around 200 metric tons (MT) of fruit this year. Next year it'll be 1,000MT, building up to 3,000MT.

Fruit picked now is going into Asia to test the market there. The dark, red purple flesh is unusual... so dark with so many antioxidants, but it's very sweet. Everyone who has tried the fruit enjoys it.

*Article collated from various sources*

# 'Biocontrol' fights invasive species

Australia's "ferals" — invasive alien plants, pests and diseases — are the largest bio-economic threats to Australian agriculture. They also harm our natural ecosystems and biodiversity. Some, such as mosquitoes, also act as carriers of human diseases.

These invasive species cost Australian agriculture more than A\$10 billion a year — more or less what states and territories spend on roads every year.

One method of controlling invasive plants and pests — known as biological control, or "biocontrol" — is to use their own enemies against them. These "biocontrol agents" can be bacteria, fungi, viruses, or parasitic or predatory organisms, such as insects.

To find biocontrol agents, we travel to the native home of invasive species and search for suitable natural enemies. After extensive safety testing, they are introduced into Australia. But do they work?

## Learning from the cane toad catastrophe

Cane toads, which were introduced in 1935 to control cane beetles in Queensland's sugar cane crops, are probably the most infamous example of biocontrol going wrong in Australia.

But Australia's borders were more open back then. To protect against such harmful mistakes, Australia now has world-leading biosecurity import regulations and an effective quarantine system.

To be allowed entry into Australia, a candidate biocontrol agent must be assessed using internationally-recognised protocols. This demonstrates that it will not pose unacceptable risks to domestic, agricultural, and native species.

## A cost-effective solution

Other control methods, such as the use of poisons and mechanical removal, require continued reapplication. Many biocontrol agents of

plants and insects, once established, are self-sustaining and don't have to be reapplied.

Prickly pear is a perfect success story of biocontrol. The plant was introduced into Australia in the late 1770s and grown in a few areas of NSW and Queensland until it became invasive following the flood of 1893 and rapidly spread. Biocontrol was initiated in the early 1900s and the prickly pear moth, *Cactoblastis cactorum*, was introduced in 1926 from the pear's native home in the Americas. *Cactoblastis* has been keeping prickly pear under control almost by itself to this day.

Since then, many more biocontrol agents have been introduced to control invasive plants. These include mimosa in our top end, bridal creeper in southern Australia, parthenium in Queensland and ragwort in Tasmania.

A series of cost-benefit analyses in 2006 revealed that for every dollar spent on biocontrol of invasive plants, agricultural industries and society benefited by A\$23. This was due to increases in production, multi-billion dollar savings in control costs and benefits to human health.

Biocontrol has also proven to be the only effective way to significantly reduce European rabbits across Australia. Myxoma virus was released in 1950, followed by rabbit calicivirus in 1995, causing regular disease outbreaks in wild rabbits. Together, they have kept rabbit numbers well below the devastating pre-1950s levels.

It's estimated that the benefit of rabbit biocontrol to agriculture is worth more than A\$70 billion. This is the only example of a successful large-scale biocontrol program against a vertebrate pest anywhere in the world.

The initial costs of biocontrol programs are generally high. That's because we have to find suitable candidate agents overseas, test them for safety in quarantine, and comply

with regulations around release.

But once biocontrol agents are released and affect the invasive species across its range, follow up control costs are greatly reduced.

## Biocontrol is not a 'silver bullet'

Biocontrol will not solve all problems to do with invasive species.

Weather and climate can affect biocontrol agents, like all living organisms. These two factors can slow and even stop the agents building-up to sufficient levels to control the invasive species.

In the case of the two rabbit viruses, virus-host co-evolution has led to a decline in effectiveness of the viruses over time as they lost virulence and rabbits developed resistance to them. This is similar to how bacteria can develop resistance to antibiotics. As a result, we must continue to search for ways to counteract these effects.

Like a multi-drug cocktail, biocontrol agents must often be used together to knock out an invasive species. And while biocontrol rarely completely eradicates an invasive species on its own, it may control it enough to be able to use other methods at a lower cost.

Just because we use biocontrol, it doesn't mean we don't need good farm practices and land management, such as bush restoration, to ensure the recovery of ecosystems affected by invasive species.

Biocontrol is unlikely to be the solution where invasive species are very closely related to species that we value — cats, for instance. Feral cats have recently been in the media as the greatest threat to Australia's mammals. But because they are the same species as the cherished family moggy, a biocontrol program would be highly controversial.

## New biocontrol programs

The historic successes of biocontrol in Australia justify continued investment. For widespread invasive

species, there are no alternatives as cost-effective that work across the vast landscapes where feral species roam.

For example, the European carp pest makes up 90% of the fish biomass in the Murray Darling river system. The most promising option being developed for large-scale control is the carp-specific koi-herpes virus that is in the final stages of testing (to make sure the virus only targets carp). Its proposed release in Australia will soon be open for public debate.

Another case is the recent release of a rust fungus from Mexico for the biocontrol of crofton weed in eastern Australia. This invasive plant smothers grazing systems and natural ecosystems, including on the hillsides of Lord Howe Island, a World Heritage Area. The expectation is that this new highly-specific rust fungus will significantly contribute to control of this plant, the way other rust fungi have successfully done in the past against other invasive plants.

After 100 years of history in Australia, biocontrol should continue to have a bright future given it is the only approach that is environmentally-friendly, cheap and effective.

**Authors:** Louise Morin, Group Leader, Biosecurity Flagship at CSIRO. Andy Sheppard, Research Director in the Biosecurity Flagship at CSIRO. Project Leader/Team Leader, Biosecurity Flagship at CSIRO

<http://theconversation.com/explainer-how-biocontrol-fights-invasive-species>

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## Quotable quote

The soil is the great connector of lives, the source and destination of all. It is the healer and restorer and resurrector, by which disease passes into health, age into youth, death into life. Without proper care for it we can have no community, because without proper care for it, we can have no life.

Wendell Berry

## Second time lucky for Willunga fund winner

Kate Washington invested her life savings in a plot of land to farm her specialist heirloom vegetables and now she's received \$10,000 from the Willunga Farmers' Market to help her grow the business.

Washington, 31, applied for the inaugural Young Farmers' Scholarship in 2014 and, after missing out, sunk her life savings into a reclaimed vineyard block to trial what would grow well. She then re-applied for the scholarship in 2015 – and this time won the award.

The Young Farmers' Scholarship was developed in response to the declining number of farmers in the agricultural industry and assists those who are interested in farming but lack the land, equipment and start-up capital to ensure a positive future in farming on the Fleurieu Peninsula.

“Winning the scholarship has allowed me to realise something I've been actively working toward for the past three years,” says Washington. “I want to grow different varieties of food to get people excited about buying local food and cooking it at home.”

Willunga Farmers' Market is providing scholarship recipients with \$3,000 worth of small business and agricultural training, together with a \$7,000 cash component to grow primary produce on the Fleurieu Peninsula. Washington will also receive a guaranteed licence to trade and a stall site at Willunga Farmers' Market to supply produce for two years. – ALISON WRIGHT

<http://indaily.com.au>

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*We have entered a time when good environmental outcomes no longer include biodiversity, but merely find cheaper ways for industry to reduce carbon emissions.*

PENNY VAN OOSTERZEE

## THIS WE BELIEVE

Humans have become so numerous and our tools so powerful that we have driven fellow creatures to extinction, dammed the great rivers, torn down ancient forests, poisoned the earth, rain and wind, and ripped holes in the sky.

Our science has brought us pain as well as joy; our comfort is paid for by the suffering of millions.

We are learning from our mistakes, we are mourning our vanished kin, and now we build a new politics of hope.

We respect and uphold the absolute need for clean air, water and soil.

We see that economic activities that benefit the few while shrinking the inheritance of many are wrong.

And since environmental degradation erodes biological capital forever, full ecological and social cost must enter all equations of development.

We are one brief generation in the long march of time; the future is not ours to erase.

So where knowledge is limited, we will remember all those who will walk after us, and err on the side of caution.

THIS IS A SMALL EXCERPT FROM THE BOOK: 'DAVID SUZUKI. THE AUTOBIOGRAPHY,' PAGE 276

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## Leave coal in the ground

Ninety per cent of Australia's current coal reserves will need to be left in the ground for Australia to play its role in limiting warming to no more than 2C. That's according to a report released today by the Climate Council, “Unburnable Carbon: why we need to leave fossil fuels in the ground”.

A “carbon budget” approach figures out how much carbon can be let into the atmosphere while limiting warming to 2C.

*This is an excerpt from the full article which is available at:*

<http://theconversation.com/unburnable-carbon-why-we-need-to-leave-fossil-fuels-in-the-ground>

# Using Fungi to clean up pollutants

**M**ycore mediation - using fungi to clean pollutants - is being used to clean waterways, soil and in some areas, even radioactive waste. Here, a US project is using locally grown mushrooms and coffee grounds to clean their local waterways.

Various projects and researchers across the world use mycelium to clean habitats.

Whether it is waterways, soil or even radioactive contaminated areas, the powerful use of mycelium to sequester contaminants, is another amazing feat from nature.

Paul Stamets, an American mycologist has been working for years with mycore mediation, using mycelium to clean up various waste sites. Known as a visionary in his field, Paul has nine patents on the antiviral, pesticidal, and remediative properties of mushroom mycelia.

His half an hour talk on how mushrooms can save the world is a good place to begin when learning about mycelium's uses, along with Paul's further research exploring an 8 step plan to cleaning up radioactive contamination and how fungi could remediate radiation at Fukushima.

With such extensive work on the subject, many projects around the world are following Paul's lead. The Ocean Blue Project based in Corvallis, Texas is just one of these.

The Ocean Blue Project, started by two local Corvallis residents - Richard Aterbury and Rosalie Bienek - begun using mushrooms to restore contaminated aquatic habitats in their area.

The project buy locally grown oyster mushroom spores that they grow in a coffee ground mix. Then they create a 'bunker spawn' which goes into the river. This consists of a burlap bag filled with wood chips and the inoculated oyster mushroom spawn. The bags are secured with bamboo sticks and placed on the river banks. As the oyster mushrooms grow, they break down toxins in-situ, removing and neutralising

the pollutants in the river (a form of bio-remediation). Oyster mushrooms have been shown to reduce E. coli and break down hydrocarbons.

Rosalie Bienek explains how mycore mediation also helps with weed control. "As we tear down weeds we mulch with wood chips. Mulching does two important things for habitat: controlling invasive plants and providing food for the fungi. Wood chips prevent weed seeds from establishing by blocking the soil. They also prevent existing weed roots from popping up again, one of the big challenges in controlling weeds. The wood chips will protect and feed the fungi we introduce at our sites."

The project intends to study the ability of mycelium to remove mercury and other heavy pollutants from soil and water. Studies have shown the *Stropharia* species, or 'the Garden Giant' is more effective for removing E. coli, so plans are underway to add the strain into the mix.

"The study shows that mycelium remove more E. coli from slow-moving water as opposed to fast-moving water. This is an important aspect we want to focus on, because ideally these fungi and plants can treat water contaminates but we just don't give them enough time to do it! A big part of the challenge in my mind is to slow down water flow enough so that the fungi can filter the water properly. This would take a big change in our old infrastructure and the financial costs pose a challenge for urban residents," says Bienek.

As well as this project helping to clean up waterways, Rosalie explains some of the other benefits: "By slowing down weed invasion we give our native plants we put at the site a competitive edge on them - this is all part of our integrated pest management program. We don't have to use pesticides to get rid of weeds, we use multiple approaches depending on the situation. Every situation is a little different and we

expect that - that's nature! This is why an understanding of ecology is important. When we understand how living things interact with each other and the environment, we can work with the natural ecosystem to solve problems."

So far the project has been successful but it will take time to determine the full effects. Richard has hopes that one day metals will be able to be extracted from the mycelium which could then be used in computer chips and batteries - waste management at its best!

The Ocean Blue Project also plan to educate the community about unchecked industrial and agricultural runoff and alternative methods to pesticides and fertilisers.

To learn more, visit Ocean Blue Project's website at [www.ocean-blueproject.org](http://www.ocean-blueproject.org) or

<http://www.permaculture.co.uk/readers-solutions/using-fungi-clean-pollutants>

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## Trees are a city's air conditioners

Trees, which provide shade and act as natural air conditioners, play an important role in helping to create cities that are more resilient to extreme temperatures as the climate warms. In urban areas, however, trees are under considerable pressure.

Population of major Australian cities is expected to double in the next few decades. Planned increases in urban density are likely to result in the removal of a significant number of trees from urban areas.

Fewer trees in cities create urban heat island effects - that's when buildings and footpaths absorb the sun's heat and then radiate it back out. Increases of up to three degrees are common and, in extreme cases, night-time increases of up to 12 degrees have been recorded.

*This is an extract from an article in the conversation last year*

# 3D printing with Food?

Food printing is highly promising, but the technique is still at its developing phase. If you would like to try a 3D printed meal today, you'll probably end up eating a 3D printed chocolate figurine, a pancake or a pizza.

These are all unhealthy products, and in order to become a mainstream way to produce meals, food printing needs to search for a smart way to produce more healthy meals.

Revolutionising the culinary industry is the innovation of sustainable 3D printed food.

## Edible growth

We live in an era where food is not only grown or bred anymore, but manufactured in a laboratory setting or built with a 3D printer. These technologies influence supply chains, eating habits, preparation methods and introduce entirely new food products to the market.

Edible growth is an example of a future food product that forms a bridge between new technologies and authentic practises of growing and breeding food.

Multiple layers containing seeds, spores and yeast are printed according to a personalized 3D file. Within five days the plants and fungi mature and the yeast ferments the solid inside into a liquid.

The product's intensifying structure, scent and taste are reflected in its changing appearance. Depending on the preferred intensity, the consumer decides when to harvest and enjoy the delicious, fresh and nutrient-rich edible.

CHLOÉ RUTZERVELD. FOOD & CONCEPT  
DESIGNER  
[www.chloerutzerveld.com/#/  
edible-growth-2014/](http://www.chloerutzerveld.com/#/edible-growth-2014/)

*The article above is a very small part of the information on this subject that's available on the web.*

# World first for Wee Waa as local company launches first organic pesticide

A Wee Waa-based agricultural research company says an organic pesticide derived from the butterfly pea plant is almost ready to head into commercial production. Innovate Ag has been working on the world-first product since 2007, and it's now being assessed by the Australian Pesticides and Veterinary Medicines Authority.

The company's Nicholas Watts said the product is still at least two years away from full regulation, but it's hoped it can be tested by cotton farmers next season. "Next cotton season we hope people will be able to buy it, but it's not really up to us at that point," he said. "It's now really in the hands of the government authorities so we can't influence those timelines as much, but they'll be able to buy it from us and trial it and use it."

Testing has shown the product does not have a detrimental impact on bees like many chemical-based pesticides. "What we want to do is kill the insects that attack the crops, but we don't want to kill or impact negatively on any of the other insects that are in the environment that are good for the environment," Mr Watts said.

"The one that springs to mind first is bees, as a lot of the synthetic pesticides on the market have a negative impact on them." The product is being lauded by its creators as being able to increase the financial viability of growing organic produce, with hopes it'll encourage a larger field of growers.

"This pesticide is so highly effective that we can really tap into that market and really give growers an alternative to what's on the market now," Mr Watts said. "It also means those traditional growers that don't necessarily grow organic now be-

cause the costs are too high and the yield penalties are too high, we can bridge that gap."

<http://www.abc.net.au/news/2015-03-17/world-first-for-wee-waa2c-local-company-launches-first-organic/6326042>

*Cities are devouring the World's best farmland, both for urban sprawl and recreation, as well as water.*

JULIAN CRIBB, 2010

## Farewell to a Landcare Pioneer

Joan Kirner will undoubtedly be remembered as Victoria's first female premier; however she will also be remembered in the heart of every Landcarer as an innovative politician, who recognised the value and importance of implementing Landcare as a policy – leading to its adoption as a national initiative years later.

Minister for Conservation, Forests and Lands at the time, Joan Kirner worked together with Heather Mitchell, then president of the Victorian Farmers Federation to spearhead the initiative. Through this partnership, Joan learnt that there was a pressing need to develop a program that would reverse the degradation of farmland, public land and our waterways.

It is with fondness and admiration that we remember Joan Kirner as an inspirational figure for many, and a true Landcare pioneer. Our thoughts are with her friends and family at this time.



**Willunga Hillsface Landcare Group**

P.O. Box 215, WILLUNGA, S.A. 5172

Meeting dates vary, but are usually held on Mondays monthly at 5 p.m. in the Willunga Hub, cnr. St. Peters Terrace, Willunga.

*All members are welcome to attend these meetings.*

**If you would like to receive your copy in PDF format (via email) please let me know as this saves the group postage. This is my address: 2garfy94@gmail.com.**

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18 High Street, Willunga

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Property size/type: .....

Occupation: .....

Signature: .....

Date: .....

**Joining/renewal fee due now \$11.00**

**Please return this form together with your joining or renewal fee of \$11 to:**

The Treasurer,  
Willunga Hillsface Landcare Group,  
P.O. Box 215, Willunga, S.A. 5172.

*Do you wish to continue receiving the "Green Challenger" (Y/N)*