



The Green Challenger

Official Newsletter
of the
Willunga Hillsface
Landcare Group

Willunga Hillsface Landcare Group

Working towards a healthy, vibrant and sustainable Willunga Basin

Autumn 2015

Plants talk to each other using an internet

Hidden under your feet is an information superhighway that allows plants to communicate and help each other out. It's made of fungi.

It's an information superhighway that speeds up interactions between a large, diverse population of individuals. It allows individuals who may be widely separated to communicate and help each other out. But it also allows them to commit new forms of crime.

No, we're not talking about the internet, we're talking about fungi. While mushrooms might be the most familiar part of a fungus, most of their bodies are made up of a mass of thin threads, known as a mycelium. We now know that these threads act as a kind of underground internet, linking the roots of different plants. That tree in your garden is probably hooked up to a bush several metres away, thanks to mycelia.

The more we learn about these underground networks, the more our ideas about plants have to change. They aren't just sitting there quietly growing. By linking to the fungal network they can help out their neighbours by sharing nutrients and information – or sabotage unwelcome plants by spreading toxic chemicals through the network. This "wood wide web", it turns out, even has its own version of cybercrime.

Around 90% of land plants are in mutually-beneficial relationships with fungi. The 19th-century German biologist Albert Bernard Frank coined the word "mycorrhiza" to

describe these partnerships, in which the fungus colonises the roots of the plant.

Fungi have been called 'Earth's natural internet'

In mycorrhizal associations, plants provide fungi with food in the form of carbohydrates. In exchange, the fungi help the plants suck up water, and provide nutrients like phosphorus and nitrogen, via their mycelia. Since the 1960s, it has been clear that mycorrhizae help individual plants to grow.

Fungal networks also boost their host plants' immune systems. That's because, when a fungus colonises the roots of a plant, it triggers the production of defence-related chemicals. These make later immune system responses quicker and more efficient, a phenomenon called "priming". Simply plugging in to mycelial networks makes plants more resistant to disease.

But that's not all. We now know that mycorrhizae also connect plants that may be widely separated. Fungus expert Paul Stamets called them "Earth's natural internet" in a 2008 TED talk. He first had the idea in the 1970s when he was studying fungi using an electron microscope. Stamets noticed similarities between mycelia and ARPANET, the US Department of Defence's early version of the internet.

Film fans might be reminded of James Cameron's 2009 blockbuster *Avatar*. On the forest moon where the movie takes place, all the organ-

isms are connected. They can communicate and collectively manage resources, thanks to "some kind of electrochemical communication between the roots of trees". Back in the real world, it seems there is some truth to this.

It has taken decades to piece together what the fungal internet can do. Back in 1997, Suzanne Simard of the University of British Columbia in Vancouver found one of the first pieces of evidence. She showed that Douglas fir and paper birch trees can transfer carbon between them via mycelia. Others have since shown that plants can exchange nitrogen and phosphorus as well, by the same route.

These plants are not really individuals

Simard now believes large trees help out small, younger ones using the fungal internet. Without this help, she thinks many seedlings wouldn't survive. In the 1997 study, seedlings in the shade – which are likely to be short of food - got more carbon from donor trees.

"These plants are not really individuals in the sense that Darwin thought they were individuals competing for survival of the fittest," says Simard in the 2011 documentary *Do Trees Communicate?* "In fact they are interacting with each other, trying to help each other survive."

However, it is controversial how useful these nutrient transfers really are. "We certainly know it happens,

Continued on Page 4

Some comments about National Landcare Conference 2014, 25-year anniversary

Venue: The Crown Conference Centre was conveniently situated, central to hotel accommodation, transport and other activities. The main theatre or Plenary Room was well appointed with excellent video and audio equipment, catering for the 600+ audience.

The concurrent sessions were held in well appointed rooms close to the main plenary room.

The Master of Ceremonies, Pip Courtney was very skilful and her role pivotal, perhaps critical to the overwhelming success of the Conference. Her excellent ability to introduce, critique, summarise and draw out the speakers were all important in the communication, entertainment and flow of the Conference.

All Plenary sessions with keynote speakers were relevant, informative and entertaining and mostly 'not to be missed' listening. This was especially so with the sessions involving Phillip Toyne and Andrew Campbell telling their story about the early negotiations towards the foundation of Landcare 25 years ago. Later we heard CSIRO's Dr. Mark Howden and Dr. Stefan Hajowicz each gave riveting speeches on Sustainable Agriculture into the future.

In all these sessions there was an emphasis on the role that community groups play in changing culture, in building resilience, in innovation, in introducing new research, in on ground works and in maintaining works. This was seen as especially important into the future.

At the Friday session it was interesting to hear our Federal Minister, Greg Hunt, using all his skills to explain to a 600 plus strong Landcare audience the intricacy of the Environment Budget. Many questions about the role of 'GreenArmy' were asked. Despite the rural base of the audience his answers were not well received.

The Concurrent Sessions gave

difficult choices but because of my interest in the farmer and landowner, I chose 'Sustainable Agriculture-Challenges for the Future & Improving Productivity' throughout the Conference. I found all sessions interesting and again apart from the technical innovations, what stood out for me was the power of community groups and networks, working in unison with Landcare and NRM, to adapt and make change.

The catered sessions, morning, lunch and afternoon tea was not only well done but gave good opportunity to freely network.

Dinner

The Gala Dinner was held in the wonderful historic and architecturally special Royal Exhibition Building. It was an evening of celebration, with Bob Hawke making a memorable appearance and a speech, referring back to the part he and his government played in the beginnings of the Landcare movement.

The National Landcare awards followed and us South Australians celebrated when the Goolwa to Wellington Local Action Planning group were presented with an award. My table gave me an excellent opportunity to meet with another group of Landcarers from country Vic. and western NSW. A slight damper on the evening for some tables including ours was the disappointing sound audio and video visuals. My dinner was only fair but overall it was a special and enjoyable evening, topped off by a dance that followed.

The Field Trip I went on, 'Showcasing Landcare over 25 years' was one of the highlights of the Conference. Not only was it interesting and hands-on, it gave an excellent opportunity to bond with fellow conference delegates and to ask and listen to questions and answers from farmers and community doing it in-the-paddock. One community

group leader expressed his passion and long term commitment. He told us how for 15 years he has been a steward to this public area of bushland and that he felt that stewardship was the key to management of our natural resources. This was a high point of our tour.

Summary

I felt the Conference was informative, encouraging and enjoyable and as a result recharged the batteries. It also confirmed that the empowering of grassroots community in the form of Landcare, networks, Friends of, catchment groups, etc. have had a profoundly positive influence in reshaping the on ground and psychological direction of a very conservative Rural Australia and the understanding and habits of a rate paying and voting Urban Australia. I would like to thank all those that assisted me to get to this Conference, especially NRM, Landcare Aust. and Gerry Butler.

John Campbell

Willunga Uniting Church holds a Christmas Tree Festival every year and John's entry won the most votes last year. Great effort John!



Up to half of all nutrients are lost on the farm itself – a problem that needs urgent attention. Julian Cribb, 2010

Regreen The Range Report

Erosion works on the creek systems of the hillsface.

The Landcare Group have begun a new phase in the Regreen The Range project by tackling the daunting task of remediating the significant erosion occurring within the creek systems across the hillsface. With funding from the AMLR NRM Board the Landcare group have begun to implement civil works on two properties to remedy sections of the hillsface suffering from tunnelling and gully erosion. One of the creek systems where works are being conducted eventually flows into the Aldinga Washpool and the other system flows into the Pt. Willunga Creek.

Both of these creek systems suffer from extensive erosion with 10,000 tonnes of sediment leaving the properties and either being deposited onto neighbouring properties, into the Washpool or even onto the Aldinga reef system. The civil works being undertaken are the first steps in the remediation of the creek systems. These works will be followed up by installing stock proof fencing to restrict stock access to the creeks and then these fenced areas will be revegetated.

The Landcare group is hoping this will be the beginning of the remediation of a vast majority of the creek systems which flow off the hillsface and into the Gulf. Many of the creek systems, especially the systems south of Willunga, suffer from extensive and active erosion. Some of the eroded creeks threaten access to some properties and some, if left unchecked, have the potential to cause damage to some of the roads in the district. The immediate priority is to address the creek systems which are either causing current issues to landholders or are having a negative environmental impact on natural assets of the basin. Undertaking works on the creek systems which flow into the washpool will

have multiple benefits both for the landholders whose properties the creek systems are on but also on the washpool itself. A number of different organisations, namely the NRM Board and the Onkaparinga Council, are currently allocating resources to rehabilitate the washpool so works that can reduce or eliminate sediment being removed from the hillsface and entering the washpool will assist these organisations with the works they are undertaking.

WAYNE LAWRENCE



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

Wednesday 13th May @ 7 pm. Dr. Eleanor Evans will talk on “Climate Change and the impacts on Health”.

Sunday, August 23rd, 9.45 for a 10am start. Aldinga Scrub walk and talk. Meet at Aldinga Scrub, Dover Street entrance. **RSVP Tuesday, 18th August.**

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 to register

An Invitation...

To attend a Farm Walk and BBQ at our President's property in Willunga.

This event is being held as part of Landcare's 25th Anniversary. John Campbell and his family have been on this property for many years and have changed it considerably over time, including much erosion control work.

Unfortunately the invitation only applies to current Willunga Hillsface group members and participants in the Regreen the Range project.

Space is limited, so people that are interested need to make a decision early as it's only the first 30 people to register that will be able to attend.

Food, tea, coffee and water will be provided, but you're welcome to bring along a bottle of your favourite tippie. A few extra fold-up chairs would also be appreciated and as this is a farm, boots are the best footwear.

John's phone number to register is 8556 2916. The date is Sunday, 14th June (also World Environment Day), from 1.30 p.m. and as the weather may be inclement, a contact phone number must be left at time of booking. Looking forward to seeing you there!

The address of John's property will be supplied to those that register and an R.S.V.P. is required by Thursday, 28th May at the latest.

Plants talk to each other... *Continued from Page 1*

but what is less clear is the extent to which it happens,” says Lynne Boddy of Cardiff University in the UK.

While that argument rages on, other researchers have found evidence that plants can go one better, and communicate through the mycelia. In 2010, Ren Sen Zeng of South China Agricultural University in Guangzhou found that when plants are attached by harmful fungi, they release chemical signals into the mycelia that warn their neighbours.

Tomato plants can ‘eavesdrop’ on defence responses

Zeng’s team grew pairs of tomato plants in pots. Some of the plants were allowed to form mycorrhizae.

Once the fungal networks had formed, the leaves of one plant in each pair were sprayed with *Alternaria solani*, a fungus that causes early blight disease. Air-tight plastic bags were used to prevent any above-ground chemical signalling between the plants.

After 65 hours, Zeng tried to infect the second plant in each pair. He found they were much less likely to get blight, and had significantly lower levels of damage when they did, if they had mycelia.

“We suggest that tomato plants can ‘eavesdrop’ on defence responses and increase their disease resistance against potential pathogen,” Zeng and his colleagues wrote. So not only do the mycorrhizae allow plants to share food, they help them defend themselves.

It’s not just tomatoes that do this. In 2013 David Johnson of the University of Aberdeen and his colleagues showed that broad beans also use fungal networks to pick up on impending threats – in this case, hungry aphids.

Johnson found that broad bean seedlings that were not themselves under attack by aphids, but were connected to those that were via fungal mycelia, activated their anti-aphid chemical defences. Those

without mycelia did not.

“Some form of signalling was going on between these plants about herbivory by aphids, and those signals were being transported through mycorrhizal mycelial networks,” says Johnson.

A dark side

Just like the human internet, the fungal internet has a dark side. Our internet undermines privacy and facilitates serious crime – and frequently, allows computer viruses to spread. In the same way, plants’ fungal connections mean they are never truly alone, and that malevolent neighbours can harm them.

For one thing, some plants steal from each other using the internet.

Slow the flow

Let everything grow

*Careful where the animals go
- and filter is a must to know*

Peter and Stuart Andrews

There are plants that don’t have chlorophyll, so unlike most plants they cannot produce their own energy through photosynthesis. Some of these plants, such as the phantom orchid, get the carbon they need from nearby trees, via the mycelia of fungi that both are connected to.

Other orchids only steal when it suits them. These “mixotrophs” can carry out photosynthesis, but they also “steal” carbon from other plants using the fungal network that links them.

That might not sound too bad. However, plant cybercrime can be much more sinister than a bit of petty theft.

Plants have to compete with their neighbours for resources like water and light. As part of that battle, some release chemicals that harm their rivals.

This “allelopathy” is quite common in trees, including acacias, sug-

arberries, American sycamores and several species of Eucalyptus. They release substances that either reduce the chances of other plants becoming established nearby, or reduce the spread of microbes around their roots.

Sceptical scientists doubt that allelopathy helps these unfriendly plants much. Surely, they say, the harmful chemicals would be absorbed by soil, or broken down by microbes, before they could travel far.

But maybe plants can get around this problem, by harnessing underground fungal networks that cover greater distances. In 2011, chemical ecologist Kathryn Morris and her colleagues set out to test this theory.

Morris, formerly Barto, grew golden marigolds in containers with mycorrhizal fungi. The pots contained cylinders surrounded by a mesh, with holes small enough to keep roots out but large enough to let in mycelia. Half of these cylinders were turned regularly to stop fungal networks growing in them.

The team tested the soil in the cylinders for two compounds made by the marigolds, which can slow the growth of other plants and kill nematode worms. In the cylinders where the fungi were allowed to grow, levels of the two compounds were 179% and 278% higher than in cylinders without fungi. That suggests the mycelia really did transport the toxins.

The team then grew lettuce seedlings in the soil from both sets of containers. After 25 days, those grown in the more toxin-rich soil weighed 40% less than those in soil isolated from the mycelia. “These experiments show the fungal networks can transport these chemicals in high enough concentrations to affect plant growth,” says Morris, who is now based at Xavier University in Cincinnati, Ohio.

In response, some have argued that the chemicals might not work

as well outside the lab. So Michaela Achatz of the Berlin Free University in Germany and her colleagues looked for a similar effect in the wild.

One of the best-studied examples of allelopathy is the American black walnut tree. It inhibits the growth of many plants, including staples like potatoes and cucumbers, by releasing a chemical called jugalone from its leaves and roots.

Achatz and her team placed pots around walnut trees, some of which fungal networks could penetrate. Those pots contained almost four times more jugalone than pots that were rotated to keep out fungal connections. The roots of tomato seedlings planted in the jugalone-rich soil weighed on average 36% less.

Some especially crafty plants might even alter the make-up of nearby fungal communities. Studies have shown that spotted knapweed, slender wild oat and soft brome can all change the fungal make-up of soils. According to Morris, this might allow them to better target rival species with toxic chemicals, by favouring the growth of fungi to which they can both connect.

Animals might also exploit the fungal internet. Some plants produce compounds to attract friendly bacteria and fungi to their roots, but these signals can be picked up by insects and worms looking for tasty roots to eat. In 2012, Morris suggested that the movement of these signalling chemicals through fungal mycelia may inadvertently advertise the plants presence to these animals. However, she says this has not been demonstrated in an experiment.

Wood wide web

As a result of this growing body of evidence, many biologists have started using the term “wood wide web” to describe the communications services that fungi provide to plants and other organisms.

“These fungal networks make communication between plants, including those of different species,

faster, and more effective,” says Morris. “We don’t think about it because we can usually only see what is above ground. But most of the plants you can see are connected below ground, not directly through their roots but via their mycelial connections.”

The fungal internet exemplifies one of the great lessons of ecology: seemingly separate organisms are

often connected, and may depend on each other. “Ecologists have known for some time that organisms are more interconnected and interdependent,” says Boddy. The wood wide web seems to be a crucial part of how these connections form.

Presented by Nic Fleming

bbc.com/earth/story/20141111-plants-have-a-hidden-internet

THE FUTURE KEEPERS

They aren’t leftist Greenies or outspoken environmental activists. Rather than being driven by blind idealism, they simply want to manage their properties responsibly and sustainably, while maximising productivity, shoring up market access for their products and guaranteeing longevity for future custodians of their land. They are, so far, small in number, but include some of Australia’s best and most progressive farmers. And, although unrecognised by government or farm organisations, their influence is growing.

They’re Australia’s emerging farm eco-warriors, who are quietly but assuredly demonstrating what successful, environmentally sustainable food- and fibre-producing landholdings will look like in the future.

The key is an independent, whole-of-farm environmental certification scheme – unique in Australia – that meets the international environmental management standard and which recognises farmers who show continual improvement. Operated by the not-for-profit Australian Land Management Group (ALMG), its fledgling army of some 150 rural producers across the country is receiving moral and financial support from major rural companies and organisations, and high-profile individuals here and overseas.

Northern New South Wales beef producer Tony Gleeson, a former advisor to Hawke government primary industries minister John

Kerin, launched ALMG with like-minded producers in 2003. Seven years later – and with the backing of bodies including Landcare Australia and Australian Wool Innovation, companies with the market power of Elders, The Merino Company and Japanese wool processor and retailer Onward Kashiya, and individuals such as Queensland Governor Penny Wensley – the group’s certification system (ALMCS) is setting the standard in this new arena.

Tony says that rather than hoping criticism of current farming practices will go away, farmers need to “embrace the environmental opportunity” and strengthen links between land use and the environment. By doing so, he says, participants will be rewarded while building skills and motivation, developing creativity and strengthening interpersonal connections.

Many of Australia’s progressive farmers are joining a whole-of-farm certification program, which recognises landholders who continually improve their environmental management.

Story By Paul Myers. Outback mag No. 70 Apr/May 2010

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.

Farming carbon can be a win for wildlife, if the price is right

Climate change and the loss of biodiversity are two of the greatest environmental issues of our time. Is it possible to address both of those problems at once?

In Australia, farmers and landholders will be able to apply for payments through the Federal government's A\$2.55 billion Emissions Reduction Fund. Bidders can request funding for projects that reduce emissions using agreed methods, which include approaches relevant to transport, waste and mining sectors, as well as the land sector: for example, by managing or restoring forests.

Forests hold carbon in vegetation and soils and provide important habitat for native wildlife. Restoring forests in areas where they have been cleared in the past could be good for the climate, good for biodiversity, and generate additional income for landholders.

How well the Emissions Reduction Fund can achieve these benefits will depend on three things: the right approach, the right price, and the right location.

Farming carbon

There are a range of approaches available for restoring forests, and they vary in how quickly carbon can be sequestered, cost, and suitability for wildlife.

For example, fast-growing monocultures such as blue gum plantations can sequester carbon very rapidly, but don't provide ideal habitat for wildlife. Planting a diversity of native trees and shrubs using an approach called environmental plantings is far more wildlife-friendly, but the costs are higher, and carbon is not stored as quickly.

A third possible approach is to assist the natural regeneration of vegetation. This can be done by fencing off cattle or by ceasing on-farm practises such as burning or disturbance with machinery. Assisted natural regeneration is the

cheapest of these three possible methods, and is also good for biodiversity: our recent paper found that it could be a great option for restoring forests in agricultural landscapes across Queensland and northern New South Wales.

Location, location, location

Across Australia, there a number of places where growing carbon could be a more profitable option than the current land use. Some of these places are more important for biodiversity than others.

If we're interested in getting some wins for biodiversity while growing carbon forests, we need to think carefully about the possible opportunities and trade-offs, as the best places for sequestering carbon are not always the most beneficial for biodiversity, and vice versa.

In our recent paper, we found that it is possible to identify where growing forests could provide win-wins for both carbon and biodiversity.

For example, the top 25% of priority areas for environmental plantings could sequester 132 million tonnes of CO₂ equivalent annually, which is almost a quarter of Australia's annual emissions (excluding those caused by land-use change).

These high-priority areas for environmental plantings could restore some of the most threatened ecosystems in Australia. There are 139 ecosystem types across the country that have lost more than 70% of their original extent. If it were possible to restore these ecosystems up to 30% of their original extent, they will have a better chance of surviving in the long term.

Restoring parts of the landscape with these ecosystems is a high priority for biodiversity – not only are the ecosystems rare, but many of the birds and animals that depend on these ecosystems are those that are most threatened. For example the brigalow woodlands of south east Queensland, of which less than

10% remain, are home to nationally threatened koalas and a host of other wildlife.

The right price

It will generally be more expensive to grow carbon forests that also provide benefits for biodiversity. This is because the places most profitable for land uses such as agriculture are often where the most threatened species and ecosystems are located.

In our analysis, we found that with a price on carbon equivalent to A\$5 per tonne, it would not be profitable to restore threatened ecosystems up to 30% of their original extent. This means that without additional funding from another source, there is limited opportunity to achieve wins for biodiversity if the price on carbon is low.

However, a higher price of A\$20 per tonne, reflecting Australia's 2011-2013 carbon price, could allow up to half of the heavily cleared vegetation types to be restored up to 30% without any additional funding for biodiversity itself. At this A\$20 price, we also found that it made more economic sense to farm carbon than the existing land use, in over 1.2 million hectares in Queensland.

This Emissions Reduction Fund auction will be a good first test of how the current approach to carbon farming can provide the dual benefit of restoring habitat for native wildlife and addressing climate change. Our analysis shows that Australia's climate policies could have a very significant impact on biodiversity - if we think carefully about the right approach, price, and location.

Authors: Megan Evans, Anna Renwick, Tara Martin. Full details available at the website listed below. There were some good photos & diagrams in the original article that I'm unable to reproduce satisfactorily.

<http://theconversation.com/farming-carbon-can-be-a-win-for-wildlife-if-the-price-is-right>

International Year of Soils 2015

The 68th UN General Assembly declared 2015 the International Year of Soils. The Food and Agriculture Organization of the United Nations has been nominated to implement the IYS 2015, within the framework of the Global Soil Partnership and in collaboration with Governments and the secretariat of the United Nations Convention to Combat Desertification.

FAO kicks off International Year of Soils 2015

Healthy soils are critical for global food production, but we are not paying enough attention to this important “silent ally,” FAO Director-General José Graziano da Silva said on the eve of World Soil Day, celebrated on 5 December.

Healthy soils not only are the foundation for food, fuel, fibre and medical products, but also are essential to our ecosystems, playing a key role in the carbon cycle, storing and filtering water, and improving resilience to floods and droughts, he noted.

The UN has declared 2015 the International Year of Soils. The year will be kicked off at events in Rome, New York and Santiago de Chile, in an effort to raise awareness and promote more sustainable use of this critical resource.

“Today, we have more than 805 million people facing hunger and malnutrition. Population growth will require an approximate increase of 60% in food production. As so much of our food depends on soils, it is easy to understand how important it is to keep them healthy and productive,” Graziano da Silva said, adding: “Unfortunately, 33% of our global soil resources are under degradation and human pressures on soils are reaching critical limits, reducing and sometimes eliminating essential soil functions.”

“I invite all of us to take an active role in promoting the cause of soils during 2015 as it is an important year for paving the road towards a

real sustainable development for all and by all,” he added.

Soils – key resource at risk

FAO estimates that a third of all soils are degraded, due to erosion, compaction, soil sealing, salinization, soil organic matter and nutrient depletion, acidification, pollution and other processes caused by unsustainable land management practices.

Unless new approaches are adopted, the global amount of arable and productive land per person will in 2050 be only one-fourth of the level in 1960.

It can take up to 1,000 years to form one centimetre of soil, and with 33% of all global soil resources degraded and human pressures increasing, critical limits are being reached that make stewardship an urgent matter, Graziano da Silva said.

Calling soils a “nearly forgotten resource,” he called for more investment in sustainable soil management, saying that would be cheaper than restoration and “is needed for the achievement of food security and nutrition, climate change adaptation and mitigation and overall sustainable development.”

At least a quarter of the world’s biodiversity lives underground, where, for example, the earthworm is a giant alongside tiny organisms such as bacteria and fungi. Such organisms, including plant roots, act as the primary agents driving nutrient cycling and help plants by improving nutrient intake, in turn supporting above-ground biodiversity as well.

Better management can assure that those usually unnoticed organisms boost soil’s ability to absorb carbon and mitigate desertification, so that even more carbon can be sequestered — helping offset agriculture’s own emissions of greenhouse gases.

FAO has embarked on a host of initiatives, including launching the Global Soil Partnership, which has rolled out the Healthy Soils Facility as its operational arm.

For more information and promotional resources visit the official FAO website. <http://un.org.au/campaigns/international-years/international-year-of-soils-2015/>

Australia’s first above-ground dairy effluent storage tank is part of a northern Tasmanian study aiming to reduce farm methane emissions. The two-megalitre tank is 40 metres in diameter, looks like a huge above ground swimming pool, and is suitable for high rainfall areas.

The Tasmanian Institute of Agriculture’s (TIA) federally funded project is testing whether shorter effluent storage times will lower methane emissions. Dairy Tasmania’s Rachel Brown, who’s collaborating with the TIA, says it is exciting research. “We’re doing a lot of research on measuring methane emissions off the surface of the tank,” she said. “We’re running the tank in a control mode, so we’re keeping the tank as full as possible and we’re measuring what sort of methane emissions are coming off there now. “Then our trial work will be to run it in short-term retention mode and see if we can get a reduction in methane emissions, so it’s quite a significant world first to be doing this kind of research.”

Funding comes from the Dept. of Ag’s Action on Ground initiative, which supports on-farm trials, measuring how they can reduce agricultural greenhouse gas emissions. The above-ground effluent storage tank is on a dairy farm in Meander, south-west of Launceston in Tasmania’s central north. Mrs Brown said the tank is useful for farms in areas of high rainfall and the effluent can be used as fertiliser. “The tank is holding the liquid waste. There’s a trafficable solids trap and a weeping wall, which is separating the solids and going into a sump and then being pumped into the tank,” she said. “Then liquids from the tank are being pumped through the farm’s irrigation system. “All those nutrients are going out on the pasture to grow grass, so it’s free fertiliser, really.



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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