

Spring 2010

McLaren-Willunga Districts Community Office for Sustainable Agriculture update (COSA)

The Landcare group have applied for 'Caring for the Country' Community Action grants funding. We're still awaiting the outcome of a grant application for a Landcare facilitator operating in the southern and northern regions and to share our Sustainable Ag. Office at Willunga and the Mt Pleasant Natural Resource Centre. We are also keeping our eyes open for other funding opportunities which at this stage will be

further seed funding to firmly establish this 'Office' in our Rural community

Our Group see that an important part of the growing and establishing of this 'Office' and its place in the community is to build positive active exposure that illustrates the varying roles and areas of interest this office could be involved in. We have designed ten

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Come and hear Dr. Ron Smernick

A leading expert on soil carbon, present the fourth lecture in the "Pathways to Sustainability" series:

"Biochar: Myth or Miracle?"

or

Monday, 22nd November, at 7.30 p.m. in the Willunga Hub

corner of St. Peters Terrace and Main Road, Willunga

It's also Willunga Hillsface Landcare Group's A.G.M., which will be brief and held **before** the lecture starts. A new committee will be elected and all interested people are encouraged to attend the meeting so that the Landcare group can continue the valuable work that it has already performed for the local community.

This will be an opportunity for all of us to keep abreast of this important development. There will be time for questions and a light supper will be served after the presentation. It's free: all welcome.

Dr. Ron Smernick is Chief Lecturer at the School of Agriculture, Food and Wine, University of Adelaide, Waite Campus

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large, very professional signs that do this job very well. These signs are multi-functional and we have 'aired' these portable poster signs at various events, including the Willunga Environment Centre, the Almond Blossom Festival parade (some good fun) and attached to the Willunga Hub building – the home of the 'Community Office'. We have had many, many wonderfully positive comments about these signs from across the community. Our Landcare group appreciated the strong contribution towards the crafting of these signs by Kym Roberts of 'The Sign Guys' and George Dridan of 'Integrated Precision Viticulture'. We are currently preparing a development application to allow these signs to be fixed to the Willunga Hub office building (on a temporary basis).

A vision unfolding...

The Group is gradually sketching out a framework of activities that this Community Office for Sustainable Ag. (COSA) might be involved in. We do not want to get ahead of ourselves because there are many others in the community that will want to contribute to the growing of this vision.

Last year Barry Featherstone, the CEO of the then Fleurieu Development Board expressed an interest in seeing similar 'Offices' to these, positioned in strategic areas across the Fleurieu Peninsular and on K.I. A broad vision plan was diagrammatically put together which outlined the possible development of such a community office. A PowerPoint display was later produced which more clearly presented this plan. We see that a 'Community Office for Sustainable Agriculture' vision, apart from being a support for our own Willunga Basin community, could provide a model for Rural Australia. Its framework will be tailored to the rural activities and geography of the particular area and community it is situated in.

The Willunga Basin has its own peculiar challenges, in that it is on an urban boundary and is classified as peri-urban. The threat of urbanization not only damaging the rural character and sense of community but also our productive soils. However, the position close to a major centre can have advantages and amongst them are the ready access to markets, labour, recycled water and to the valuable knowledge and innovation found at Waite Research, our Universities and TAFE.

In these troubling and uncertain times this 'Office' could play a significant and positive role in strengthening the sustainability of our community and its agricultural/horticultural practices.

A vision for this Sustainable Agriculture Office (COSA) that is gaining considerable interest is one that has two major activities at its focus. The first is to work with growers and grower groups to ensure that they have the latest of information, research

and innovation on sustainable practices, not only in the field but also those to do with markets, marketing, new products, different varieties, new crops etc., etc. The other, is to be involved in a network of well managed and resourced 'City farms'/ community gardens, stretching from Seaford, Hackham, along the coast and through to McLaren Vale, Willunga, Pt. Willunga, Aldinga and Sellicks. The aim is to strongly connect these 'City farms' to sustainable agriculture. This will not only strengthen community resilience, but be exciting to both schools and tourists for their educational value and practical innovative approach. Each would be producers of garden food, but be differentiated by a theme of interest such as Aquaculture, renewable energy, water, etc. In the future they may have a powerful role in experimental research monitoring, social cohesion and local food production.

The next Newsletters will summarise this vision and develop the importance of the 'City farms' role to community and agricultural sustainability.

JOHN CAMPBELL.

Regreen the Range update

The Landcare Group has completed another successful year of planting across the Willunga Hillsface. Over 21,000 seedlings and over 3.5kg of direct seeding were planted this season across 5 properties. Four of the properties were located south of Wilhunga and one property at McLaren Flat. Planting was carried out a little later this season due to the good rains that fell across the district in August. This should prove to be very beneficial for the revegetation as good moisture levels will be held in the soil well into spring and with the weather warming during spring this should give the seedlings and direct seeding a good start. If good spring and summer rains are recorded across the district the revegetation should establish itself successfully.

Our group is continually working on properties in the district to try to improve the condition and function of the revegetation the group has established across the hillsface. On one such property, located near Sellicks Hill, we are now trying to establish native grasses and under-storey species amongst revegetation that was planted over eight years ago. Re-introducing native grasses and small under-storey plants into areas where they traditionally were, but now have to compete with exotic annual grasses, can be quite problematic.

In some areas of the revegetation on this property there is some natural suppression of the exotic grasses occurring, presumably from the revegetation, and this has allowed us the opportunity to plant native grasses and smaller under-storey plants. A number of different species have been planted in a number of different locations to determine which will do best in which location. As a result of these trials it is hoped that in the future a broader range of under-storey species will be able to be established.

In the last newsletter we talked about the work being done in some of the remnant vegetation in the district. One property we've been working on had major problems with an infestation of Montpelliar Broom. This property has a significant amount of Stringybark woodland and the Montpelliar Broom was potentially a significant threat to the regeneration of the woodland. The Landcare group, and some very dedicated bushcare workers, have been able to remove completely all of the Broom located on this property. This has been tremendous outcome, not only for this property, but also for the neighbouring properties

where the Broom could spread and become a major weed issue. The removal of Broom from this property and the surrounding areas has been a concerted effort between a number of stakeholders.

The AMLR NRM Board has allocated substantial resources for removing Broom on the roadsides around this property and Trees For Life have also allocated resources to remove Broom from a Bush For Life site adjacent to this property. The landowners have also put in a large amount of time to remove Broom before it flowers and sets seed. The coordinated effort between all of the stakeholders in this project has been terrific and has resulted in the removal of a significant weed problem that afflicts the Willunga hills from this property. It is hoped that this project can be built upon, with neighbouring properties having this invasive weed removed from their properties.

Wayne Lawrence.

Not getting the drift

For many environmentalists and activists, among whom I include myself, there is great frustration in having to fight battles that should not have to be fought at all. At the moment the theories behind manmade global warming are again being hit by a wave of sceptics. But whether or not humans are responsible is, to a great degree, beside the point. If we do miraculously find out that it is all a result of natural climate shifts, does that then mean we should continue with our wanton exploitation of natural resources and the planet to the point that it is unliveable anyway?

We are continually sidetracked from the important issues, or the fundamental truths. Chemical pesticides is another case in point. There's an extraordinary story about Georgina Downs, a British community activist who had suffered ill health throughout her childhood.

Io-one could tell her why, but as a teenager she began to wonder about the chemical spraying near her home. Now, aged 35, she has won a landmark decision in the UK High Court that slams the British government's regulation of pesticide use and, in particular, spraying of crops. Basically, after a seven-year legal battle to reveal the truth about the health effects of spraying, Downs has shown that the methodology and thinking behind government controls is flawed and that the health of residents near crop spraying has been seriously jeopardised.

Meanwhile, in Australia, the Australian Pesticides and Veterinary Medicines Authority (APVMA) has recently introduced 'Operating Principles in Relation to Spray Drift Risk' (www.apvma.gov.au), which I urge all readers to download and appraise. The APVMA admits the regulations controlling spraying are less than perfect and wants to address this. But again one must ask, "Why are we fighting to protect

our health from chemicals that should not be sprayed in the first place?"

With many chemicals permitted for spraying, operators don't have to inform neighbours when they are going to spray, so avoiding the sprays is difficult. I have received numerous letters from readers desperate to know how they can get nearby spraying stopped. One reader recently described a neighbour who sprays in very windy conditions with spray floating all over the now densely-populated area — houses, tanks, creek..." She says that, after many years of this, her organic garden is: "Finished — it's no longer organic."

In its new operating principles, the APVMA refers to this well-known problem:

"When a declared spray drift risk area happens to extend across a property boundary onto a neighbour's land, the risk management options require effective communication and co-operation between the chemical user and the neighbour. Past experience has shown that good communication and co-operation do not always occur between neighbours and that the chemical user is sometimes prepared to proceed with a spray operation despite a neighbour's objection, provided that the action is not obviously illegal and easily prosecuted."

In 2008, Japanese natural farming pioneer Masanobu Fukuoka died at the age of 95. He was the author of the seminal book, *The One-Straw Revolution*, published by Rodale Press. In 1978, he pointed out a simple truth that, if listened to, could have leapfrogged all these regulations: "Methods of insect control which ignore the relationships among insects themselves are truly useless."

This article reproduced with permission from Organic Gardener March/April 2009 and was written by their Editor, Steve Pope.

The Coming Famine: the risks to global food

security

Julian Cribb FTSE. Keynote address, National Landcare Forum, Adelaide, March 23, 2010 Abstract:

In coming decades the world faces the risk of major regional food crises leading to conflicts and mass refugee movements. This is driven primarily by emerging scarcities of all the primary resources required to produce food. The paper outlines key factors in emerging global food insecurity and proposes some solutions, which include Landcare.

Population

Many are aware there will be 9.2 billion people in the world of 2050 – but human history, one hopes, does not stop there. Human numbers are forecast to keep on growing to around 11.4 billion in the mid 2060s. By that time we will be eating the same amount of food as 14 billion people at today's nutritional levels.

Demand for food will more than double over the coming half century. The most urgent issue confronting humanity in the next 50 years is not climate change or the financial crisis — it is whether we can achieve and sustain such a harvest.

Food

Current world food output is keeping pace with growth in human numbers - but not with growth in food demand. This gap will widen as more societies undergo economic development and switch to western diets and 'fast foods' rich in meat, dairy and oilseeds. By the 2060s we will need to produce 60 quadrillion calories a day to keep humanity fed.

The food crisis of 2007-08 was not a one-off event. It was the first tremor of a far greater and more devastating series of events triggered by the combination of our insatiable demand for food coupled with the growing failure of the resources needed to produce it.

Water

For the first time in history, urban demand for water is outpacing farm demand, as city users outbid irrigators. By 2050 cities will consume more than half of the world's available fresh water. This could be as much as 2800 cubic kilometres, which is more than the entire world uses for irrigation today.

Even if some cities use desalination, many will take their water from farmers — indeed they are already doing so — and this, combined with global warming, could halve supplies to the world's irrigators.

By 2050, 3 billion people face acute water scarcity and another 5 billion moderate scarcity (International Water Management Institute).

An example is the Indo-Gangetic foodbowl which feeds 1.3 billion. Make no mistake, the glaciers are melting – the only argument is over how quickly. As they melt the rivers will rise, then empty, bringing potentially catastrophic reductions in the size of the harvest in one of the world's most populous regions. Signs of this are already evident.

Rivers

Around the world ground-water aquifers, lakes and rivers are drying up as they are pumped dry and the climate changes. Mighty water bodies like Lake Chad have shrunk to a tenth their former size and we have our own Murray-Darling tragedy to reflect on. Regions like the North China Plain, which feeds 400 million, are already critically short of water.

IWMI director general Colin Chartres says "Current estimates indicate that we will not have enough water to feed ourselves in 25 years time, by then the current food crisis may turn into a perpetual crisis."

Soils

In 1990 an international study found that 15 per cent of the world's land area was seriously degraded. Two years ago an FAO study found this had risen to 24 per cent. Yet the issue of land degradation and desertification seems once more to have fallen off the global agenda — an also-ran in the sea of other issues that governments focus on.

The area of land available to support each human being has shrunk from 8 hectares at the start of last century to 1.6 today – and will halve again by midcentury.

We are losing about 1 per cent of the world's farm land to degradation, urban sprawl, mining, recreation and pollution every year. If we have already lost 24 per cent and lose 1 per cent from here to 2050, you can work out what will be left with which to double food production.

In the fifteen years to 2005, global demand for food grew 27 times faster than the area of farmland needed to produce it.

Megacities

Cities are devouring the world's best farm lands both for urban sprawl and recreation, as well as its water.

By 2050 there will be several cities with populations exceeding 20, 30 and even 40 million. The global urban area will exceed the landmass of China. Its recreational hinterland will occupy an area the size of the USA. All of this will be prime farm land – and practically none of it will grow food: a potential disaster for these giant cities if their food supply ever fails.

We must understand what the word "development" really means: the permanent destruction of food potential. We need to start passing laws against it.

Nutrients

The world is haemorrhaging nutrients at every link in the chain between farm and fork. This colossal waste is also threatening the planet's nutrient cycle and food webs. We now inject around 150 million tonnes of nitrogen and 9 million tonnes of phosphorus into the biosphere that wasn't there before modern civilization. If we double it, we could end up killing entire oceans.

When Canadian Patrick Dery applied Hubbert's peak theorem to phosphate reserves he was alarmed to find we had passed 'peak phosphorus' in 1989. From now on demand for nutrients to grow food will progressively outrun the discovery and development of new mineral resources. Countries that control major resources will be strongly tempted to withhold them for their own farmers. There is a high risk of acute scarcities and soaring fertilizer prices.

Waste

Up to half of all nutrients are lost on the farm itself – a problem that needs urgent solution.

Then, of the food we actually produce, more than half is wasted — either post-harvest or in the food chain which shows how much food an average western family trashes in a month.

The Stockholm Institute calculates that of every 4600 calories of food produced, 2600 are wasted.

Farmers; modern society is sending nearly half your efforts to landfill. Our grandparents would say we were idiots – and they'd be right.

Peak oil

The world will pass peak oil and gas by 2020, according to the International Energy Agency. Global demand for petroleum is outstripping the rate of new discoveries.

Peak oil has already happened in the US, in Australia, Britain and in 49 out of the world's 65 oil producing regions. Yet more than 51 million new cars are hitting the world's roads every year.

Peak oil and gas will have a dramatic impact on the price and availability of farm fuel, chemicals and nitrogen fertilizer especially. By 2040 it is unlikely fossil fuel will be used in agriculture.

If farmers were to grow their own fuel it would cut world food output by between 10 and 30 per cent at the very time we need to double it. So whatever is the new farm energy source – algal, biodiesel, hydrogen or solar-electric – we have only a couple of decades to develop and adopt it. A crash programme for doing this is now a matter of national and international urgency.

R&D

Worldwide investment in ag research is about \$40 billion globally and has been stagnant in real terms since the early 1970s - when the population was half what it is today.

In agricultural science leaders such as the US, Australia, Germany, Britain and China, research is actually shrinking. Advanced countries now spend only 1.8 cents in every research dollar on food, so unimportant do governments now consider this to be.

Reflecting this, crop yield increases have declined sharply in recent years and no longer keep pace with growth in world demand for food.

Since it generally takes more than 20 years for a new piece of technology to reach millions of farmers worldwide, the world's farmers are now driving into a huge technology pothole.

The knowledge needed to boost world food production will simply not be available.

Fish

29 per cent of world fisheries are in a state of collapse according to Boris Worm and colleagues (2007). Most of them could be gone by the 2040s they warned.

Plagues of jellyfish in the world's oceans signal the impact of over-fishing and nutrient pollution, while carbon emissions are turning the seas acidic, threatening entire marine food chains.

FAO (2008) states "the maximum wild capture fishery potential from the world's oceans has probably been reached" and "In the case of inland fishery resources, there is widespread over-fishing."

If we cannot double the ocean harvest as food demand doubles, we will have to produce 100 million tonnes more meat from land animals, requiring a billion tonnes more grain and 1000 cubic kms of fresh water. Added to the 185mt in increased demand for meat which FAO anticipates will be required by 2050, this will require the equivalent of three more North Americas to produce.

Climate

Regular drought could affect 40 per cent of the planet's land area by the end of this century warns the UK's Hadley Centre for Climate Prediction.

Their soil moisture projection indicates that regions once thought to have increased farming potential, such as Latin America, southern Africa and the Indian grain bowl may prove unreliable.

The International Food Policy Research Institute has just warned of a 30% drop in irrigated wheat yields in Asia and 15 per cent in rice yields. The World Bank says there could be a potential loss of up to 50% in African food productivity and 30% in the Indian subcontinent due to climate change.

(Continued next page)

The coming famine... Continued from Page 5

Australia is already regarded, justly, as "the canary in the coal mine" — experiencing reduced food potential as a result of climate change, which in turn is linked significantly to the burning of coal and overclearing land.

GFN

Ecological overshoot is a term coined by the Global Footprint Network to describe how we are withdrawing more resources from the planet than it is capable of replacing in a year.

The GFN estimates we now consume the total productivity of 1.3 Earths in food, water, energy and other resources.

If the trend continues, they say, we will consume 2 planet's worth of production by 2050 – a situation which is totally unsustainable.

If every person on Earth lived and ate like an Australian we would need FOUR Planet Earth's to support them all.

Put simply, today's food production systems and diets are not sustainable. We have to re-invent them.

Challenge

The challenge facing the next generation of food producers is immense.

It is to more than double the global food supply using half the water, far less land area and exhausted soils, without fossil fuels, with very costly fertilizer, with limited technology, spreading diseases and pests, under the hammer of an erratic climate.

Conflict

The consequences of failure are profound. Recent wars have been driven by scarcities of food, land and water. Dafour, Rwanda, Eritrea, the Balkans were all destabilized, at root, by disputes over these basic resources.

The UK Ministry of Defence, the American CIA, the US Centre for Strategic and International Studies and the Oslo Peace Research Institute all recognize famine as a potential trigger for conflicts and even for possible nuclear wars.

The wars of the 21st century are less likely to be global conflicts with sharply defined sides and huge armies than a scrappy mass of failed states, invasions, rebellions, civil strife, insurgencies, terrorism and genocides driven by competition over scarce resources.

These wars can be forestalled by humanity managing successfully to meet the rising demand for sustenance, despite all the constraints mentioned.

At present we spend about \$40 billion a year on R&D to increase the global food supply and \$1500 billion – forty times as much – on developing and buying weapons. So we have the money to fix the problem, if we want to.

Refugees

Famines in any significant region – Africa, India, Central Asia, China, Indonesia or the Middle East – will confront the world with tidal waves of tens, even hundreds of millions of refugees. Sea level rise alone could displace 50 million people by the end of this century.

We should remember that the 50m refugees are preceded by over 200m legal immigrants. Already a quarter of a billion people are on the move, each year.

The movements of the future will exceed the largest migrations of history. Even places as physically remote as Australia could face refugee tides in the millions, threatening profound change, even destabilization, to many societies.

Solutions

The easiest way to increase food availability is to declare a world war on waste – to cease squandering half of all the food we currently produce, by recycling all our nutrients and water.

It also means reinventing agriculture, so that it uses vastly less inputs and no longer damages or loses its resource base.

It means redesigning our huge cities so that they are no longer so terrifyingly vulnerable to food shortages.

It means reshaping the human diet so it no longer costs the planet so much.

Vegies in sky

It means developing entirely new food industries, such as intensive vegetable production in our cities where vast amounts of nutrients and water are now being wasted. Vegetables can produce ten to 100 times the amount of food for the same area of land or input of water or fertilizer as grains or meat. They employ more people and they can turn our sterile concrete cities into verdant landscapes.

Biocultures

We will also develop entirely new systems that convert waste water and nutrients into healthy food, energy, stockfeed, fertilizer, fine chemicals and pharmaceuticals using biocultures based on plant, fungal, microbial and animal cells.

Vegies

It means reshaping the human diet for the 21st century to one that is healthier and lighter and uses less resources. That does not kill half its consumers, as today's western diet does.

This is a diet containing about 50% more vegetables than today's western diet. (It will still contain meat and dairy, but in smaller quantities and at a much more profitable return to growers)

There are several thousand "undiscovered" indigenous vegetables to make this a culinary adventure as well as a global awakening and a health revolution.

Rangelands

Meat production will go back to the rangelands where it will be much lower in energy intensity, be organic and more acceptable to changing social mores than today's 'factory meat'.

It will use advanced remote-management technology known as 'precision pastoralism' to produce high-value, healthy meat, while saving water, reducing grazing pressure and restoring vegetation. It will lock up vast tonnages of carbon over immense tracts of the earth's surface to offset agriculture's greenhouse footprint.

New technologies like greenhouses that use sunlight and saltwater to grow crops will emerge.

Knowledge key

Sustaining food production through the midcentury peak in human demand and numbers is the global scientific challenge of our era.

More urgent even than global warming or the economic crisis is the need to deliver to farmers the new know-how and technology they need to maintain food production in the face of all the constraints described.

We need to lift our current investment in agricultural R&D fourfold – doubling the research effort and adding a massive endeavour to disseminate new knowledge to both farmers and consumers.

This can be funded by levying the global weapons spend of \$1.5 trillion just 10%. This will make the world safer, healthier and more peaceful at the same time.

Young women in all cultures are refusing to marry and have children. If we support them, they can reduce the global population peacefully and voluntarily. We must uphold the right of individuals in all cultures not to reproduce, if they so wish. We must cease the censorship of this topic.

∡ustralia's Landcare role

Australians are blessed by the dry, fragile, lean and unpredictable character of our continent. Over the past 200 years we have taxed her beyond her natural limits many times and she has shown us the error of our ways — in damaged soils, dried-up waterways, invasive species, salt and acidity.

Our continent is a marvellous teacher. She shows us how to survive when resources are scarce and climate variation is extreme.

What we learn from her is knowledge the whole of humanity now needs, in order to survive peaceably in the resource-scarce, unpredictable world that lies before us.

Our biggest mistakes are now our most valuable assets – the understanding of how to care for and nurture landscapes, water flows, biodiversity and to sustain food production.

The outlook for Australian agriculture and trade over the coming decades is very bright, despite the climate.

However our greatest opportunity and responsibility is to share our science, technology, skills and know-how with a world that will desperately need them.

The global outlook is one of increasing food insecurity, risk of regional famine and conflict. No country or individual is immune from this.

The farmers, agricultural scientists and policymakers of Australia have a vital role to play in the human destiny – to help avert what otherwise may become the worst famines in history.

This is a shining challenge, both inspiring and within our powers. I believe it is Australia's destiny to serve humanity in this way.

Julian Cribb

Environment Centre

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

18 High Street, Willunga. Phone: 8556 4188 10 am – 3 pm, Mon.– Fri., Sat. 9.30 am – 1.30 pm.

COMING EVENT...

Bird identification – site and sound

by environmental consultant Phil Barron

on Wednesday, 10th November at 7pm at the Centre.

ALSO

Field trip on Saturday, 13th November... early morning

Numbers limited! Registration essential. Phone oremail: willungaenviro@westnet.com.au

Another Field trip is arranged for Saturday, 20th November:

AQUAPONICS

(Sorry. I have no further details available about these field trips. *Brian*)

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



PO Box 215 WILLUNGA SA 5172

Meeting dates vary, but are usually held on Mondays monthly at 4.30 p.m. in the Willunga Hub, cnr. St. Peters Terrace, Willunga.

All members are welcome to attend these meetings.

President:

Treasurer:

John Campbell 8556 2916

Chairperson:

Kate Parkin 8556 2024 Margaret Morris 8556 2535

Secretary/Regreen the Range Manager:

Wayne Lawrence 0423 283 043

Publicity: Bria

Brian Visser..... 8556 4292

Committee members:

Michael Fishlock 8557 7320

Ben Heyward 8186 1607

Paul McKenzie8556 7011

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