

Permaculture Cairns Newsletter

EMPOWERING COMMUNITIES WITH SUSTAINABLE SOLUTIONS



Care for the Earth, Care for people, Fair share the excess

Permaculture Cairns Incorporated Web Site: www.permaculturecairns.org.au

APRIL NEWSLETTER

PERMACULTURE CAIRNS MEETING

6pm for a 6.30 start

ARC Disability Centre 92 Little Street Manunda

Members free, but bring some nibbles for the cuppa break
and a dollar for the raffle, which helps pay for the venue.

Non members \$5

AGENDA

Welcome to new members and visitors

Upcoming workshops and events

Permaculture Principle Number 3, a practical explanation.

Guest Speaker:

Rob Pyne our local Member of QLD Parliament will talk to us about the issues he is taking on.

Here is your opportunity to ask questions and bring up issues you feel are concerning you.

Let's talk about the future of Permaculture Cairns and how we can help address the big issues
such as climate change.

Plant of the Month, Tool of the Month, Book of the Month and if anyone has something to add
please bring it up on the night before we go for a cuppa and nibbles.

Meeting close and now time for a chat, a cuppa and a snack with like-minded people

All finished by 8.30pm.

Permaculture Principle No. 4

Apply self-regulation & accept feedback

“The sins of the fathers are visited on the children unto the seventh generation”

We need to discourage inappropriate activity to ensure that systems can continue to function well.

The icon of the whole earth is the largest scale example we have of a self-regulating ‘organism’ which is subject to feedback controls, like global warming. The proverb “the sins of the fathers are visited unto the children of the seventh generation” reminds us that negative feedback is often slow to emerge.

Growing Food in April in The Tropics

At last the weather has changed. Time to prepare the garden beds for planting.

Check your pH and add Lime if necessary, and water in.

Don't put the lime and fertilisers on at the same time, allow a week between.

Add compost, organic fertiliser, and some blood and bone for tomatoes and other heavy feeders, leave a week or so before planting.

You can direct seed lettuce, bok choy, rocket, coriander, beans and corn into prepared bed.

Time to start seeding into pots for transplanting later

Sow seeds of your favourite veggies each week or two from now on so you will have them coming on right through the growing season.

Now is the time when you can almost grow anything you choose too, some years it will get too hot too soon for cauliflower and the plants that take over five months to produce.

The Mushroom patch

I have been experimenting with cultivating a wild Paddy Straw Mushroom (*Volvollaria volvacea*) which appeared in my garden about 5 years ago. Eighteen months ago two friends identified the mushroom and became interested and in experimenting with different substrata on which to grow them and tissue culturing to produce the spawn. Finally, this year we were successful and I have had lots of mushrooms come up in the banana patch. And they are delicious

We will continue with this project next year when the hot weather returns.

In the mean time I am about to try growing Oyster mushrooms on coffee grounds and maybe have go at growing Shitakes too



INTERNATIONAL PERMACULTURE DAY MOVIE MARATHON

Sunday 7th May

9:30am-3:30pm

ARC Disability Centre 92 Little Street

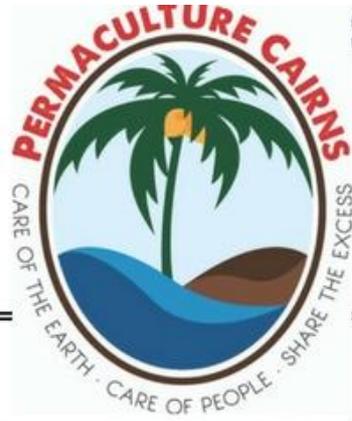
Manunda

Movies to Teach and Inspire!



Come along and celebrate *International Permaculture Day* with us. There will be also be a plant stall and food stall.

Entry by gold coin donation .



INTRODUCTION TO AQUAPONICS

Saturday 28th May

9am-12:30-pm

Redlynch

Learn how to Grow Vegetables and Fish all in the
One System.



\$20



Register E: workshops@permaculturecairns.org.au Ph: 0435 120 944

PERMACULTURE CAIRNS
BUILDING RESILIENT COMMUNITIES WORKSHOPS

Sponsored by



Permaculture Cairns Workshop

Grow Your Own Nutrient Dense Food

Sunday 14th MAY 9am to 1pm

Presenter: Carol Laing



Topics In this workshop

Soil structure, soil pH testing, re-mineralising & balancing minerals
Increasing organic matter and microbes in soil.
Composting: Static pile, Aerobic, Anaerobic, Compost bin, Bokashi bin
Plants to grow for improving soil,
Lime, Dolomite, and Gypsum explained;
Introduction to Tropical Perennial Vegetables.

Workshops will be held on a permaculture property in Cairns.

COST: \$30 includes morning tea, workshop notes, seeds/cuttings and a fertiliser sample

Interested? contact me Carol Laing at – newsletter@permaculturecairns.org.au

My growing experience: Commercial vegetable grower for 6 years, plant nursery owner/operator for 10 Years. Study:- Certificate in Horticulture 1983, a two weeks Permaculture Design Certificate Course 1992, Microbe Course and Chromatography Course with Mas Humas 2012, Elaine Ingham's online Microscope Course' 2013, Graeme Sait's 4 day Nutri tech Solutions, Certificate in Nutrition Farming 2014, and while attending National Biological Farming Conference 2016 I attended David Hardwick's Workshop on Soils. I also attended workshops on Soils with Terrain, Northern Resource Management and FNQ Biodynamics. I have an extensive library on many subjects, but mostly on how to grow food well using the microbes in the soil.

*Workshops are all conducted with
Permaculture Ethics and Principles in mind.*

Workshops and Events

Cairns Seed Savers Meeting

Cairns Seed Savers is an informal group of individuals with a passion for saving seeds and growing fruit, vegetable and other useful plants that have been passed down through generations and are adapted to our local conditions.

WHEN: Sunday 23rd April 2017

WHERE: Catherine's place, 63 Nebbia Access Rd, Green Hill. Turn off Bruce Hwy sth of Edmonton on Warner Rd (main Yarrabah turnoff). Continue 8km and turn off to RIGHT just past Middle Creek bridge onto Nebbia Access Rd. At the very end of the road take grass driveway on left – parking in front of the large shed. **PHONE:** Jo 40553053; Catherine 0434575587

WHAT TO BRING: • Organically grown, non-hybrid seeds for our Seed Bank • A plate of food to share for lunch • Your own chair, plate and cutlery • Your spare seedlings, cuttings, plants and produce for the Share Table

AGENDA: 10 – 11:00AM Meet'n'greet, general housekeeping, seed sorting and access to Seed Bank

11:00 – 12 Talk by Catherine about keeping goats and attaining self-sufficiency in dairy and meat. Group discussion about ideas for growing produce on her recently acquired property.

12 - 12:30 Enjoy a shared lunch

12:30 – 1PM "Show and tell" of any other great ideas/inventions.

Tour of Catherine's property – please wear closed shoes.

As we will be beside a large unfenced dam, any children must be strictly supervised.

See you there

Biodynamics FNQ Events Calendar 2017

May 14th Sunday -10-3.30pm

Horn Burial and AGM

Collins Farm, 709 Kaban Rd, Kaban

Bring chairs and food to share for lunch.

June 11th Sunday 10. – 3.30

Life in the Soil

Soil Food Web and Chromatography and Microscopy

Patrick English Pavillion

Malanda Showgrounds

Bring food to share for lunch

Enquiries: Simon Harden 07 40977837 Cheryl Kemp 4095 1119.

AUSSIE BEE EMAIL UPDATE

Number 33 / April 2017

Aussie Bee Website <http://www.aussiebee.com.au>

Promoting the Enjoyment and Preservation of Australian Native Bees

Topics in this Issue:

1. WILD POLLINATOR COUNT IS ON NEXT WEEK: 9-16 APRIL

2. MASSIVE BOOST FOR NATIVE BEE RESEARCH

3. GET A BEE B&B HOTEL FOR YOUR SCHOOL

4. WHAT'S HAPPENING AT AUSSIE BEE

5. UPCOMING NATIVE BEE EVENTS

1. WILD POLLINATOR COUNT IS ON NEXT WEEK: 9-16 APRIL

The Autumn Wild Pollinator Count is about to start. This is a great chance to learn more about your local pollinating insects and also contribute to pollinator conservation in Australia!

It only takes 10 minutes to do a count. Simply note down what kinds of insects you see visiting some flowers in your garden or local park. Then submit your observations online.

You don't need to be an expert or to have any fancy gear. The Wild Pollinator Count website provides useful fact sheets to help you identify the insects you spot.

Last autumn, over 200 observations were sent in from 86 localities across eastern and southern Australia. Then last spring, observers in Western Australia also joined in. Let's see how many observations Australia-wide can be done this autumn! Why not get your local school or community group involved? To get started, visit:

<https://wildpollinatorcount.com/count-pollinators/>

2. MASSIVE BOOST FOR NATIVE BEE RESEARCH

Two multi-million dollar research programs will bring exciting new insights into Australian native bees! Native pollinators make an estimated \$2.5 billion contribution to Australian agriculture, by helping to pollinate our crops. The new research aims to boost the number of pollinating insects on our farms Australia-wide.

Teams of researchers at four major universities will study the health of our insect pollinators and ways to increase the variety and number of native pollinators on our farms. We look forward to the new discoveries that will be made about bee diseases, the effects of climate change on our pollinators, and the best ways to support pollinators on farmland.

Australia has always been highly dependent on the European honeybee for crop pollination. However, honeybees are under threat from pests and diseases. This new research will help farmers make much better use of our thousands of native pollinators too.

Bronwen Roy is studying bee viruses as part of the research program at the University of Western Sydney. Listen to Bronwen's entertaining introduction to her project in this YouTube video:

<https://www.youtube.com/watch?v=kNeZWs4wWvk>

And Dr Katja Hogendoorn is one of the team leaders in the research program at the University of Adelaide. Read more about Katja's research in this Land Newspaper report: <http://www.theland.com.au/story/4559938/hope-for-native-bees-blooms-as-varroa-mite-looms/>

3. GET A BEE B&B HOTEL FOR YOUR SCHOOL

Having a Bee Hotel at school is a great way for kids to learn about our Australian native bees and other native pollinators. A generous program by Weleda Australia supplies primary schools with a free 'B&B' hotel in kit-form. Students help to construct and set up the hotel. Then local native bees can find a 'bed' in this hotel and 'breakfast' from the school garden!

To register for the Weleda Bee B&B Hotel program, visit: <http://beehotel.weleda.com.au/registration-form/>

4. WHAT'S HAPPENING AT AUSSIE BEE

Aussie Bee Website receives hundreds of thousands of visitors every year and has provided wide-ranging articles, photos and videos on Australian native bees for nearly two decades. We are now working on a major upgrade of our website's structure, to make it easier for people to view this information on mobile phones and tablets. We will also add new resources to our website, based on helpful suggestions from our visitors through the website survey on our homepage. Warm thanks to the many people who have completed our Aussie Bee Website Survey!

New editions of all of our native bee booklets are now available too, from our Aussie Bee Shop. We have updated the scientific names in these booklets and added recent research findings from the native bee scientists. In the new edition of Booklet 9, Russell and Janine Zabel have updated all of their advice and tips in this Do-It-Yourself Guide to Boxing and Splitting Hives. Visit the Aussie Bee Shop: <http://www.aussiebee.com.au/abshop.html>

5. UPCOMING NATIVE BEE EVENTS

Like to see some Australian native bees? See what's on in your area:
QUEENSLAND

WORKSHOPS ON STINGLESS BEEKEEPING

BY TIM HEARD and/or TOBIAS SMITH

<http://www.sugarbag.net/events>

Generally the workshops are a mix of a photographic slideshow showing the biology of the bees with a practical session on keeping them. Tim demonstrates how to split hives and extract honey, and use the bees for pollinating your garden. Attendance price varies. Contact the organisers directly for details and to register.

Wynnum Library, Queensland

29 April, 2017, 10am to 4pm

Six hour workshop on native bees and how to keep them

Presenter: Dr Tim Heard

Free workshop, bookings are essential, spaces limited.

Phone Wynnum Library on 07 3403 2199 to reserve your space.

Northey Street City Farm, Brisbane, Queensland

29 April 2017, 9am – 4pm,

Native Stingless Bees Sustainable Living Workshops Northey Street City Farm,

16 Victoria Street, Windsor, Brisbane

Dr Tobias Smith presenting Tim Heard's workshop

Cost: \$85 / \$65 Health Care Card Holder plus booking fee.

Bookings: <https://www.eventbrite.com.au/e/native-stingless-bees-with-dr-tobias-smith-presenting-tim-heards-workshop-tickets-29842383372?aff=erelexpmlt>

Mitchelton Library, Queensland

13 May, 2017, 10am to 4pm

Six hour workshop on native bees and how to keep them

Presenter: Dr Tim Heard

Free workshop, bookings are essential, spaces limited.

Phone Mitchelton Library on 07 3403 7410 to reserve your space.

Coopers Plains Library, Queensland

20 May, 2017, 10am to 4pm

Six hour workshop on native bees and how to keep them

Presenter: Dr Tobias Smith

Free workshop, bookings are essential, spaces limited.

Phone Coopers Plains Library on 07 3403 1530 to reserve your space.



Dr Wendy Seabrook, Director

[GROWING HEALTHY FOOD WITH LESS HARD YAKKA](#)

Two-day course - Saturday 10th and 11th June 2017 at Hill Top Farm, Cooktown Queensland

Growing healthy food doesn't need to be such hard work. Redesign your garden to grow yummy food more reliably and with fewer costs. At our course 'Growing healthy food with less Hard Yakka' you'll have fun designing an ecological makeover for your garden. Letting nature give you a helping hand. Creating an enchanting garden, you'll have more time to enjoy, and a safe space for your children to play, picking passion fruit, paw paws and pomelos ...

[GETTING TO THE HEART OF PERMACULTURE DESIGN](#)

Four-day course - 15th – 18th July 2017 at Hill Top Farm, Cooktown Queensland

At this 4-day course, we'll take you on a journey to the heart of Permaculture Design.

As Bill Mollison said – at its heart Permaculture mimics nature. He understood that by learning from nature we can make our gardens, farms, and communities sustainable. In ways that are also productive, easier to manage, and better able to bounce back from extreme weather and other unchosen change.

In this course, you'll develop ways to bridge the gap between how your project operates and natural ecosystems perform using our Toolkit of Ecological Practices and Permaculture Design

Things You Can Try At Home

Got Weeds??? Give Solarisation a try

The Basics of Solarisation

Solarisation is a simple method to reduce harmful soil organisms, like weeds, nematodes, insects and soil-borne diseases, which will help your vegetables and flowers grow and produce better. The thing is that solarisation requires heating the soil to a high temperature and then maintaining that temperature. Therefore, soil solarisation is best done during the middle of summer.

Interestingly, research has shown that increased vegetable yields gained by solarisation are greater than what would be expected from just destroying insect and

disease-causing pests. While no one is quite sure exactly why this is true, results consistently show increased yields. There is evidence that the solarisation process makes nitrogen more readily available to plants which could account for some of the increased yields. Also, beneficial soil organisms can be favored by solarisation and tend to 'bounce back' faster than do the more harmful organisms.

How to Solarize Your Garden Soil

First you must understand that the process works by simply trapping the heat of the sun under clear plastic to pasteurize the upper layer of the soil where most of your plant's roots are located.

To solarize your garden or flower bed, first prepare the soil. Eliminate as many weeds and old garden plants as you possibly can – bare soil is what we are after. Next, turn or till the soil as deeply as possible to produce a uniform soil texture. If your soil is too dry to easily work, water it deeply, wait a few days and then turn or till.

For solarisation to work, the soil needs to be moist and damp to allow the sun's heat to penetrate the ground as deeply as possible. So, give the area a good soaking before covering it with plastic. The plastic used to cover the area should be clear, not black. Clear plastic lets light energy pass through and then traps it, much like a greenhouse. Black plastic absorbs most of the sun's heat without letting it pass through to the soil below. 1-to-6 mil plastic will work fine but keep in mind that in this case the thicker the better. Pull the plastic tight and cover the edges with soil or stone to help keep the soil moist and to prevent strong gusts of wind from blowing it away.

Leave the plastic in place for at least a month and the longer you leave it on the better the results. Two to three months would be ideal, but good short term weed control can be gained in a month. The soil in the top several inches should heat almost to 150 degrees F. which is hot enough to pasteurize the soil and kill many of the harmful organisms. Remember that the beneficial soil organisms do tend to bounce back quickly and are not greatly harmed by the treatment.

Got something of interest, send it to newsletter@permaculturecairns.org.au.

News from Home and around The World

Innovative businesses get a kick-start

A Victorian vehicle manufacturing start-up with ambitions to be Australia's first production electric vehicle, and a company developing a disruptive new class of insecticides have been given a kick-start thanks to a new funding initiative that helps small businesses access CSIRO research expertise and capabilities.

CSIRO Kick-Start is a new initiative that offers dollar-matched funding of up to \$50,000 to enable research projects for start-ups and small businesses that are on their way to becoming Australian success stories.

Tomcar Australia are just one of the first six businesses to receive the funding and are using it to feasibility research into electrification of their modified off-grid, off-road vehicles with CSIRO's Manufacturing team.

RIGHT: Tomcar Australia's off-road/off-grid vehicle.



The work will provide an integrated systems solution tailored to Tomcar's vehicles, and builds on CSIRO's electric motors expertise.

Following the feasibility testing, Tomcar plan to continue their collaboration with CSIRO in the development of prototypes and full production of Australia's first electric vehicle, forecasted for a 2018 launch.

"We pride ourselves on being a disruptive vehicle manufacturer, and being able to partner with Australia's research institutes to access engineering capabilities and expertise that we wouldn't normally have access to is what's helping us achieve that," Co-founder and CEO of Tomcar Australia David Brim said.

"CSIRO's Kick-Start program has taken away the financial burdens that would have prohibited us from taking this next step."

Bio-Gene, an Australian small business developing a new class of synthetic insecticides, has received \$50,000 of dollar-matched funding through CSIRO Kick-Start to access CSIRO's proprietary chemistry expertise and equipment.

The co-investment will support Bio-Gene's development of the chemically synthesised FLAVOCIDE - a nature identical product that aims to address the major worldwide problem of insecticide resistance in the areas of crop protection, animal health and public health.

"The experience, expertise and commercial knowledge of CSIRO in new chemistry manufacturing processes is world-class," CEO of Bio-Gene Robert Klupacs said.

"Being able to access it through this unique collaborative model is a major competitive advantage and one which we expect will greatly accelerate or product development activities."

Keith McLean, Director, Manufacturing at CSIRO said Australian start-ups and SME's were critical in driving Australia's innovation output.

"CSIRO is committed to supporting them by providing access to our research expertise, capabilities and facilities," Dr McLean said.

"CSIRO Kick-Start is just the beginning of what we hope to be long-standing collaborations and strategic partnerships."

The new CSIRO Kick-Start initiative boosts the national science organisation's existing support for SMEs and small businesses, now offering funding and linkage solutions to all Australian businesses with a turnover up to \$100million to undertake research projects that will help their businesses develop and grow.

For more information on CSIRO Kick-Start and CSIRO's suite of SME solutions visit, www.csiro.au/SMEconnect

To learn more about Tomcar Australia visit, <http://www.tomcar.com.au>

To learn more about Bio-Gene visit, <http://bio-gene.com.au>

Judge allows California to require cancer warning on Monsanto's Roundup

From Treehugger newsletter

A judge has ruled against Monsanto; company complains that it would drive some customers away. Unsealed documents add to drama.

California's Proposition 65 is an initiative all states should be so lucky to have. The voter-approved Safe Drinking Water and Toxic Enforcement Act of 1986 requires the State to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm. It has resulted in a plethora of warning labels on products that may otherwise be marketed as innocuous.

Last January, the Big Ag powerhouse, Monsanto, sued California EPA's Office of Environmental Health Hazard Assessment when the agency issued a notice of intent to add glyphosate to its Proposition 65 list of chemicals. Glyphosate is a controversial chemical that acts as the active ingredient in Roundup, the pesky weed killer that is sold in more than 160 countries. Roundup works in tandem with Roundup Ready crops, which are crops genetically modified to be resistant to the herbicide – the seeds of which are also sold by, yes, Monsanto. In California, Roundup is used on 250 types of crops.

While the company has denied any connection between cancer and the use of glyphosate, others disagree. In selecting the chemical for listing for Prop 65, California regulators went with findings by the France-based International Agency for Research on Cancer, considered a gold standard for cancer research, notes the **Associated Press**

And now Superior Court Judge Kristi Culver Kapetan has dismissed Monsanto's challenge. In her final ruling, the judge said that none of Monsanto's objections were viable, the **Fresno Bee** reports.

Monsanto's attorney, Trenton Norris, told the judge that the warnings would drive some customers away, hurting the company.

Meanwhile, on Tuesday a federal court unsealed documents that appear to shine a bit light on some of Monsanto's practices. The files were unsealed by Judge Vince Chhabria, who is

presiding over litigation brought by people who claim to have developed non-Hodgkin's lymphoma as a result of exposure to glyphosate, reports **The New York Times**:

The court documents included Monsanto's internal emails and email traffic between the company and federal regulators. The records suggested that Monsanto had ghostwritten research that was later attributed to academics and indicated that a senior official at the Environmental Protection Agency had worked to quash a review of Roundup's main ingredient, glyphosate, that was to have been conducted by the United States Department of Health and Human Services.

"Glyphosate is not a carcinogen," Monsanto claimed in a statement. Again, others beg to differ.

"People should know that there are superb scientists in the world who would disagree with Monsanto and some of the regulatory agencies' evaluations, and even E.P.A. has disagreement within the agency," Robin Greenwald, a lawyer involved in the lymphoma litigation, told The Times. "Even in the E.U., there's been a lot of disagreement among the countries. It's not so simple as Monsanto makes it out to be."

Carbon is not the problem

George King - Managing Director at The Whitney Pastoral Company Pty Ltd,
"Coombing Park"

I recently had the privilege of flying Walter Jehne from the southern temperate zone of New South Wales, through the deserts of Central Australia to the subtropics of the Northern Territory. About 20 hours of return flight time looking at and talking about Australia's environments. Walter is a soil microbiologist and probably the most intelligent and knowledgeable person I have ever met. He is immensely patriotic to Australia and has the clearest understanding of environments.

Here is the layman's version of some of what I learnt. Carbon is not the problem, it is certainly a major symptom of the problem though. Even if we cut our carbon emissions to zero right now it will take hundreds of years for the carbon levels to fall to pre-industrial revolution levels. And no developed country is going to cut their standard of living so drastically.

The root problem is that on a local level we have adversely affected the hydrological cycles of the environment. The world population and distribution is at such a saturation now that human local land management is catastrophically effecting the global environment. The good news is that we have the ability to reverse any damage we have done to the hydrological processes, it is simple, it is affordable and we will produce more food in the process.

For the past 420 million years soils have been the foundation for the evolution of life on land, it stands to reason that the soils will hold the solution to turn around our current practice from damaging soils globally to growing them again as nature has been doing for millennia. Almost without exception every nation's greatest export by volume and value is eroding soil.

Our soils are formed and are governed by the microbial processes which regulate much of the Earth's critical carbon, water, nutrient, heat dynamics, cooling and climate cycles and more importantly their interconnected balance. The natural hydrological processes govern 95% of the heat dynamics and balance of the blue planet. We have been damaging these hydrological processes for more than 10,000 years but particularly in the past 300 years.

Naturally over 90% of the incident solar energy entering the troposphere is safely transmitted back out to space via a range of hydrological processes. This has created and regulated the Earth's temperature, rainfall and climate for billions of years allowing life to evolve. The damage we have done to the environment is manifested as damage to the terrestrial hydrological cycles, and this damage is exacerbating the environmental damage in a destructive feedback loop. Every additional gram of carbon in the soil allows the soil to hold an additional eight grams of water. We have oxidised vast quantities of carbon from our soils globally which means the soil holds less water, grows less green matter and attracts less rain.

There are several factors which cause rain. Australia has rivers of moisture floating overhead which does not convert to rain – approximately 10 times more moisture flows over our nation than falls on it. Most of our moisture waits until it gets over the oceans where it is cool enough for the microhaze to coalesce into large enough droplets to nucleate as water and fall from the sky. Microbial nuclei released from green vegetation causes microhaze to coalesce into rain. If the microbial nuclei, salt nuclei and ice precipitation nuclei are not present it is a lot greater push for the microhaze droplets to cool and coalesce into raindrops, when this happens the result is heavy storms and erratic weather patterns.

The world was naturally 50% covered by dense cloud which reflected 33% of the incident solar radiation back into space, systematically cooling the atmosphere. The world is now carrying a large humid haze which cannot easily coalesce into dense clouds. Normally the humid haze should coalesce into clouds, rain, and then reopen the windows to re-radiate heat back out into space during the night. Currently these windows are blocked by the water hazes which are responsible for some 60% of the observed greenhouse night time temperature increases.

Science has understood the capacity of these hydrological processes which govern and cool the blue planet but they were assumed too big to be influenced by humanity. Instead research focused on CO2 levels and its minor greenhouse effects as both the cause of and the focus for a solution. The world has spent 30 years and \$60 billion on these assumptions to no real benefit.

The inescapable reality is humanity has massively impacted the hydrological processes of 10 billion hectares or 60% of the earth's land surface by denuding plant and tree growth. We can reverse this by naturally regenerating plant & tree matter to restore our soils and biosystems, using the soils as a massive carbon sponge to hold more water, to grow more grass and to feed more people while we are stabilising the world environment. Being involved with this repair makes me proud to be a farmer.



His Excellency Christophe Lecourtier, Ambassador of France & Walter Jehne, Soil Microbiologist, discussing using farming soil as a global carbon sink

- Published on April 24, 2016

Regenerating the Earth's Soil Carbon Sponge; humanities last chance to rehydrate, cool and secure our safe climate.

For the past 420 million years the sequestration of carbon by plants has formed the Earth's organic soils. It is our soils which regulates so much of what goes unnoticed - earths water cycles, the biology of the land as well as the heating and cooling dynamics which ultimately culminate into what we know as a life sustaining climate.

However over the past 10,000 years humans have cleared and burnt over half of these bio-systems, often oxidizing and degrading their residual soils. These practices release some 2 billion tons of carbon per annum which is contributing to the rise in carbon dioxide levels in the oceans and the Earth's atmosphere.

This land degradation limits the capacity of the residual bio-systems to sequest carbon from the atmosphere. The consequences of this degradation threatens our water, food, habitat, bio-resources and safe climates which all of humanity depends on for its survival.

The resultant climate extremes are increasingly threatening our survival. Communities need to urgently regenerate the resilience and health of their soils to restore these bio-systems. Allowing longer intervals of plant growth to facilitate deeper root structures will increase the capacity to draw down carbon from the air and sequester it back into our soils. Every additional gram of carbon added to the soil allows the soil to store an additional 8 grams of water. Increasing soil carbon levels will help restore the water cycle and associated cooling dynamics needed to buffer climate extremes.

Leading natural bio-systems can fix and bio-sequester over 100 tons of Carbon/hectare/annum. Innovative farmers globally often fix and sequester up to 10 tC/ha/an. By contrast current industrial agriculture oxidises and loses over 5 tC/ha/an, degrading our soils and future (CSIRO).

The great Russian soil microbiologist Krasilnikov judged soil fertility by counting the numbers of microbes present. He said, 'The notion of soil is inseparable from the notion of the development of living organisms in it. Soil is created by microorganisms. Were this life dead or stopped, the former soil would become an object of geology not biology'.

Organic content of soil is decomposition of organic matter into the soil. Post industrial revolution farming practices cannot wait for organic matter to decompose naturally into the soil, instead it must be sprayed out, cleared or burnt to make way for the next crop.

Without minerals and soil organic matter it is impossible to sustain a healthy population of microorganisms.

The Nutrition Security White Paper published the studies of the mineral content of soils today with soils 100 years ago and found that agriculture soils in the US have been depleted of 85% of their minerals, Africa 74%, Asia 76%, Europe 72%, South America 76% and Canada with 85% less minerals.

Common sense would have it that this nutritional integrity of our food should be closely linked with the growing health issues our population faces. Given that farmers manage 6 billion hectares of the Earth's residual bio-systems, their adoption of such innovative ecological carbon farming practices is now

critical if we are to draw down the carbon needed to rehydrate, cool and secure our safe climate and meet essential water and nutritional requirements.

At COP21 nations agreed that we must not just reduce emissions but also draw down past carbon emissions to achieve a global ZERO NET emissions target urgently. This includes adoption of France's lead in increasing the draw-down of carbon into its soil carbon sponge by at least 0.4% annually.

Healthy Soils Australia, via its farmer networks and others internationally, helps farmers regenerate their soil carbon, health and viability. Potentially their draw down of carbon could bio-sequester some 1 billion tons of carbon annually in Australia and up to 20 billion tons of carbon globally (HSA); to more than offset humanities current net annual emissions so as to rehydrate, cool, buffer and restore our safe climate in time.

Our challenge is to urgently extend adoption of such natural and profitable carbon farming practices. We must also pay premiums for naturally grown food. This is fast becoming the single guiding light for a timely solution to cool, buffer and limit the impact of the intensifying climate extremes which threatens social stability for the projected population of 10 billion.

Walter Jehne walterjehne@yahoo.com.au Cindy Eiritz healthysouls3@gmail.com
www.healthysouls.com.au

Stop Press

Seed suppliers- online catalogues

The Seed Collection from \$1 packet, \$2 postage under \$20, free postage orders over \$20

Seeds2freedom -\$3.50 packet - Free postage-

Green Harvest prices and postage vary

Moon Gardening Calendar available from

www.moongardeningcalendar.com

\$15.50 including postage

J & R Scott

P.O. Box 492, Kuranda 4881

Editor, Carol Laing - newsletter@permaculturecairns.org.au

Please **PRINT – SIGN – SCAN** and **RETURN** by email to
treasurer@permaculturecairns.org.au.

Permaculture Cairns

Membership Form 2017

One year's membership fee - 1 Jan – 31 Dec:

- Household membership \$30 Renewing Member
- Individual membership \$20 New Member



Name(s) of all applicant(s) & DOB if under 18yrs):

.....
.....
.....

Postal Address:

..... **Postcode:**

Phone(s):

Email:

Signature:

Payment may be made at Meetings, at Cairns Penny or Online Direct Deposit to Permaculture Cairns A/c at Cairns Penny in Grafton Street. BSB704-966 A/c No. 100009440 please include your Surname as reference.

If you have a Permaculture Design Certificate could you please complete the following survey.

YOUR NAME:.....

Who was the Course Presenter:.....

When did you do the Course:.....

Where did you do the Course:.....

Permaculture Cairns Public Meetings - All Welcome Every month on the Third Tuesday of month Jan to Nov (Second Tuesday in Dec). Doors open 6pm, meeting starts at 6.30pm at: ARC Disability Centre, 92 Little Street, Manunda

Enquiries

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