

# Permaculture Cairns Newsletter

EMPOWERING COMMUNITIES WITH SUSTAINABLE SOLUTIONS



**Care for the Earth, Care for people, Share the excess**

Permaculture Cairns Incorporated

Web Site: [www.permaculturecairns.org.au](http://www.permaculturecairns.org.au)

---

## Permaculture Cairns Newsletter for September

Our next night meeting will be on the 18th October 2016  
Mike Prociv will be our guest speaker. Mike will teach us about  
espaliering fruit trees. More info on the meeting later.

### Report on our day at Carnival on Collins.

Jenny, Craig and Carol were at Carnival on Collins, we enjoyed the day talking to people who wanted to know more about growing their own food and what Permaculture Cairns was doing in the future. It was a great day and many people signed up for the newsletter and more info on our series of organic gardening workshops starting in October. See the upcoming Backyard Meeting below.

### Permaculture Principle No. 9 - Use small and slow solutions

**“The bigger they are, the harder they fall.” “Slow and steady wins the race.”**

Small and slow systems are easier to maintain than big ones, making better use of local resources and produce more sustainable outcomes.

The snail is both small and slow, it carries its home on its back and can withdraw to defend itself when threatened. The proverb “the bigger they are, the harder they fall” reminds us of the disadvantages of excessive size and growth while “slow and steady wins the race” encourages patience while reflecting on a common truth in nature and society.

# PERMACULTURE CAIRNS SEPTEMBER BACKYARD MEETING

Saturday 17th September 2016 - 8:45am for 9:00am start 12.00pm finish

## Making a wicking bed using an ibc



Members Only (All Welcome to become Members for \$10) Cost \$5 Fee or Plant for the wicking bed.

Bring your Note Pad, Pen, Camera, Hat, Sunscreen and a SMALL plate of food for morning tea.  
There is a limit on participants, so please prepay before the event.

Register at [info@permaculturecairns.org.au](mailto:info@permaculturecairns.org.au)

Payments may be made at Cairns Penny Bank in Grafton Street or online to Permaculture Cairns

Account: BSB 704-966 A/C 100009440

VENUE: Manoora (address given when you register for this event)

## *Growing Food in The Wet Tropics in September*

Plant corn, snake beans, asian greens, eggplant, capsicum and chilli. And tomatoes, I have found Tropic, Tommy Toe or Roma tomatoes, are the best varieties for the coming hot months, These would appreciate some part shade in the hot part of the day.

Herbs, basil, vietnamese mint, brahmi, mushroom plant. I have been growing the European herbs such as thyme, lemon thyme, oregano, marjoram in large pots with the cheapest potting mix and very little fertilizer for many years. Large leaf parsley is easier to grow than the curly one during the hot weather. I have had success growing parsley throughout a really wet wet season by leaving the plant in the plastic pot when planting in soil leave the pot sticking out of the soil about 6cm – this stops the crown rot which develops at the base of the plant in wet weather. The roots come through the holes, or you can cut the bottom off the pot.

Plant and eat tropicals green vegetables Okinawa, Sambung, Brazilian, tree lettuce, leaf ginseng, Tahitan Taro. Tropical root crops, taro, cocoyam, sweet potato, cassava, ginger, turmeric, peanuts and arrowroot for food and mulch.

## **WORKSHOP – Sat 15<sup>th</sup> or Sun 16<sup>th</sup> OCTOBER 2016**

### **Learn how to grow your own organic nutrient rich food**

The series of organic gardening workshops will start next month either Saturday 15<sup>th</sup> or Sunday 16<sup>th</sup> morning for 4 hours, dates to be decided after agreement. Depending on numbers there may be more than one workshop and could be held during the week if that suits.

The plan is to continue the workshops next year, to ensure you will be successful in growing your own food. Once your soil has been re-mineralised, organic matter and microbes increased, the growing of plants is so much easier. Pests and diseases are almost non-existent because your nutrient rich plants are no longer attractive to insects.

The idea behind this series is to start at the beginning, preparing the soil before planting next year. The first workshop will include the following

**how to grow a green manure crop,  
how to increase organic matter in the soil,  
how to compost and which plants to grow for composting/mulching  
how to increase beneficial microbes  
how to make compost teas and how to use worm products.**

All of these practices will benefit your plants when you plant out next year in the cooler months. We will also cover the growing of tropical vegetables.

The workshops will be held on a permaculture property in the Cairns city area, where many tropical vegetables and fruits are growing.

**COST: the first workshop will be at a discounted fee of \$20**

So if you are at all interested please contact me Carol Laing at –  
[newsletter@permaculturecairns.org.au](mailto:newsletter@permaculturecairns.org.au)

**AND PLEASE ADVISE WHICH DAYS WOULD BE SUITABLE FOR YOU TO ATTEND!!!!!!!!!!!!**

Perhaps we will create a group of people interested in growing food well and meeting others who are just as dedicated to helping themselves improve their families health. You may learn to relax and enjoy the garden, learn out to include your children in this important activity. You could also make some new friends.

## **PLANT OF THE MONTH**

### **PIGEON PEA – *Cajanus cajan***

This plant is amazing, a perennial legume from the Fabaceae family. It was domesticated in India thousands of years ago and now the seeds have become a common food all around the world. And it easy to grow.

Nutrition wise in 1 cup (168g) there are 203 Calories, Dietary fiber 11.3g

Fat 0.6g, Protein 11.4g, Potassium 18% Calcium 7% Magnesium 19% Iron 11% Also contains Vitamin B6 5%,

From this plant you will get green peas to steam and eat, dried seeds for making a dahl curry dish, shade for the hot weather, a screen plant, a trellis, mulch and it is a legume which puts nitrogen in the soil.

And each time you cut it back for chop and drop mulching, or for making compost, the equal amount of roots will die back in the soil and feed the microbes – this is a miracle plant and should be in every garden.

In the garden you can use it for shade in the summer and in the dry season when you don't need the shade cut it back for mulch. It can also be used as a screen plant for privacy or wind protection.

If you want to grow for shade, trim off all the new shoots coming from the main stem up to the height you want and then let it branch out.

I believe I have had success growing tomatoes with making compost from pigeon pea and crotalaria and incorporating this into the soil where I could not previous grow tomatoes. This year I tried 5 other varieties, but Tropic has been the only one to survive. If you have the Bacterial Wilt in your garden, it looks like this – the tomatoes grow beautifully and is just putting out small fruit and then overnight it droops and in a few days it dies. That is the Wilt and this happens all around the world in Tropical areas – a big problem for growing plants in the Solenacea group such as tomatoes, egg plant, capsicum, chili. So if you have that problem, make compost with pigeon pea and crotalaria, and build up the organic matter and beneficial microbes in your soil.

(I will be holding workshops on this beginning in October this year and in the months leading up to the vegetable growing season next year see details above).

## WHATS'ON AND WHAT'S COMING UP

**Biodynamics FNQ Invite you to the ANNUAL HORN LIFTING**

**This Sunday 11th September, 2016 10am to 3pm**

At Collins Farm, 709 Kaban Rd, Kaban See directions below.

We will lift the Horn Manure from its winter sojourn in the soil. See how we make Preparation 500, -Horn Manure 500. This the very important soil preparation that when sprayed to the soils helps develop humus, attracts in azotobacter and other micro-organisms, works with calcium and draws in the Cosmic forces to bring vitality to the soil and to our food.

What to bring: Wear old clothes, a chair and a plate/ bowl of beautiful food for us all to share at lunch. You are welcome to bring any friends with you who might be interested in learning more about Biodynamics.

Time for discussions and maybe make some other preparations afterwards. Direction to Collins Farm:

Kennedy Hwy coming from Atherton way, turn right at Tumoulin to Ravenshoe Rd,

9 km to Kaban Rd on right, then 1.5 km to Collins farm on right just a you come out of bushy area.

For Preparation orders or Home Gardeners Kits phone Max on 40977893

Any queries : Contact Cheryl on 40951119 or Simon on 60977837

## Friends of the Botanic Gardens

Wednesday 14 September - 6pm - Light refreshments

Travels in botany in Malaysia - Gary W. Wilson, Adjunct Research Fellow, Australian Tropical Herbarium

Gary currently divides his time between Australia and Malaysia, and while in the latter pursues a number of ecology and conservation-related issues. In this presentation he will discuss how one showy species of terrestrial orchid is adapting to human-modified landscapes, while a second, previously very common, is now on the verge of extinction in Peninsular Malaysia.

Gary will then discuss wider plant-orientated conservation issues, particularly those relating to the ingress of exotic species, and their intriguing association with the illicit trade in wildlife.

Amenities area behind Friends House - All welcome  
Friends \$5, Visitors \$10

## Kanjini Co-Op Upcoming events

Eco-inspirations from the 16<sup>th</sup>-18<sup>th</sup> September 2016

Sustainable Living Gathering bring people together to share in interactive workshops, talks and demonstrations while creating lasting networks for an environmentally, financially and socially abundant life. A gathering to raise inner and outer awareness and provide tools for change towards a more sustainable future. Found out more on our Facebook event page for Eco-Inspirations. For more [www.kanjini.org](http://www.kanjini.org)

## Movie That Matter With Rob Pyne MP – Putting Cairns First

Friday 30<sup>th</sup> September 2016 - 17.30 – 21.00  
ARC Disability Services Inc 92-94 Little Street.

Movies that matter is a chance to come together, watch a movie, share some food, and chat about what is going on in Cairns.



## The JCU Community Garden is now open

There will be working bees from 3 to 5pm every Wednesday.

All welcome

The group is wanting to know more about Biochar and if they can find someone with knowledge on this subject they will run a Workshop in September. Can you help -

Email: [laura.campbell@hotmail.com](mailto:laura.campbell@hotmail.com)

## FNQ Community Exchange – LETS Local Energy Trading System September Calendar of Events

KOAH – Saturday 3rd 9am – 1pm Monthly Market and Trade at Koah Community Hall. You are invited to be part of the local Koah Monthly Market, an excellent family friendly venue. This is a traditional cash Market however LETS members are welcome to participate and trade \$5 per stall or 5B, set up from 8am. EVENT HOST: Tonielle – 0422058995

ATHERTON – Saturday 3rd 11am – 2pm LETS Monthly Market 17 Evens Street. A monthly event as a trial, to replace the LET Shed "shop" we used to have. Sellers must be present. There is covered space for a large number of tables. Tables for hire for 5B. Shared lunch. Book your site  
Event Host : Irene 0439914876

YUNGABURRA – Saturday 3rd Alliance Française from 1pm @ that retro cafe hosting with fresh croissants & French style lunch menu. Come learn to speak, practice or listen in French. All Francophiles welcome. This is not a LETS event.

CASSOWARY COAST - Sunday 4th 9am – 3pm Johnstone River Community Garden Picnic Flying Fish Point Rd, Innisfail. Garden Harvest Lunch This is not a LETS event. Contact Bernie - 0403523244

MALANDA - Sunday 11th 10am – 12 noon. Malanda Trade in the Park. Eacham Memorial Park, opposite the post office. Bring along morning tea to share, something to trade and display your wares. There is a shelter, so it's an allweather event. Welcome Home Katrin! Be there or be square.

RAVENSHOE - Saturday 17th 12 - 2pm Trade afternoon Youth Shed, Ravenshoe Community Centre, 3 Bolton Street. Following Community Gardens gathering - come and check it out – there is normally lots of fresh produce on Offer! Child friendly event. Bring something to trade and some lunch to share. Event host: Kathy - 40977864

CASSOWAY COAST - Sunday 18th 11am – 3pm LETS Trade. Bring Lunch to share (BBQ available), items to trade, information on services offered and some good conversation as well.

Please consider BYO plate & cutlery to save our host excessive dish duties. Carpooling recommended when making the trip from the tablelands. (\*Weather permitting) EVENT HOST: Bernie - 0403523244

KEWARRA BEACH – Friday 23rd 5pm – 7.30pm, Address available with RSVP to Ilona. Plenty of tables available on site , please come and load them up then share a slice of home made pizza. Make an effort, you won't regret it. Event Host: Ilona 0438759711

YUNGABURRA - Saturday 24th 12 - 2pm that retro café Trade Afternoon. This event is immediately after the Yungaburra Market. Bring along something to trade a rug to display your wares. 100% Bartles for drinks from the menu, you will need cash for lunch and drinks from the display fridge. Please be mindful when setting up to keep the path clear at the front of the shop.  
Event Host: Melitta - 40952340

CAIRNS CITY – Sunday 25th 12- 2pm - Lafew Teahouse, 33 Sheridan Street. LETS relies on member initiative and participation to make events happen - At Lafew we provide a prime position opposite Rusty's Market. We offer: kombucha, tea and coffee. Available 50/50 Bartles/\$. Bring your trading sheets and goodies. We like to focus on edible plants and would love to see our garden area used as a drop off & pick up for edibles. For new members - please drop by and chat to the LETS traders, you can sign up on the day. Event Host: Lorna – 0475762838

What to bring to Trade Events where not specified above: food & drinks for yourself or to share, or money and/or Bartles at some venues, friends, Trading Record Sheet and pen, any goods you wish to trade, table/rug to display them upon is often useful, your own chair at some venues, promotional material of any services you are offering if applicable, \$20 for a LETS account if you don't yet have one.

fnqces@gmail.com - 4096 6972 - [www.fnqces.org](http://www.fnqces.org) - [www.communityexchange.net.au](http://www.communityexchange.net.au)

## Regenerative Agriculture Convergence Sunday 23 October – Wednesday 26<sup>th</sup> October

Brandemarti'S Farm, Koah

Friends of the Farmers presents the Regenerative Agriculture Convergence 2016 offers presentations, workshops and experiential hands on sessions on:

Permaculture design, organics, biodynamics, soil revitalisation,  
Experiences making: bio-fert, biochar, activated compost

Want more info <https://sustainabilityalliancefnq.wordpress.com/2016-conveyergence/>

CAIRNS CONVENTION CENTRE, Friday 28, Saturday 29<sup>th</sup>, Sunday 30 OCTOBER, 2016

## Pay Dirt: National Biological Farming Conference and Expo,

To hit pay dirt: to discover something of value; to get to the basic facts of something.

Cairns will be the centre of the soil health world this October when delegates to the National Biological Farming Conference look to strike pay dirt with some of the best farmers and agricultural researchers in the world.

Bowen tomato grower, Jamie Jurgens, opens the conference with his story of generational change and resilience in embracing biological farming. He is closely followed by internationally-renowned North Dakota regenerative farmer, Gabe Brown, explaining how his integrated crop management system that has eliminated pesticides and artificial fertilisers means he now has more time to fish. Dr Brajesh Singh, professor in microbiology from University of Western Sydney, puts Australia's biological farming into an international context with his insights from work advising key agricultural policy makers in the USA and EU.

Around 50 farmers, agronomists and researchers from Australia, the US and New Zealand will educate, enlighten and entertain on topics from composting to climate resilience, drones to dung

beetles and biochar to bioherbicides. Farmers and graziers from WA, SA and up the eastern coast are poised to tell their stories of challenge and change across industries as varied as wheat and sheep, beef cattle, dairying, cotton and grains, sugar cane and bananas, viticulture and tree crops. Pre conference tours and post conference workshops will introduce delegates to biological farm practices close up. The conference will close with a vision for agriculture in 2060.

An exciting expo will bring together around 40 exhibitors with the latest biological farming techniques, products and practices to help farmers understand how to make changes on large-scale enterprises.

The conference is convened by not-for-profit soil health group, Wet Tropics Soilcare, recipients of an Australian government grant for sustainable agriculture and strongly supported by Terrain NRM, the natural resource management body for the Wet Tropics, northern NSW-based SoilCare Inc, and other sponsors.

Register at early bird prices until August 7th \$225+GST by booking online at [www.nationalbiologicalfarmingconference.org.au](http://www.nationalbiologicalfarmingconference.org.au) From August 8th, \$350+GST.

For more info, contact Regional Landcare Facilitator, Fiona George, [info@nationalbiologicalfarmingconference.org.au](mailto:info@nationalbiologicalfarmingconference.org.au) or phone 0488 702 203.

Editors note – these events don't happen enough in the far north so when they do make sure you attend. An enormous amount of work has gone into organising this event so make a real effort to be there, It will not happen again for a long time.

## INFORMATION – SERIOUS AND USEFUL STUFF A MUST READ!!!!!!

### Nutrition and Disease – Interview with Professor Don Huber – Part 1

31 August 2016

I recently attended a one-day presentation in Toowoomba by **Professor Don Huber**. A capacity crowd was treated to memorable sharing. This remarkable microbiologist delivered a compelling summary of his lifetime study of minerals and microbes and their interrelationships. He also shared details of his research related to the herbicide, glyphosate. The room was often left in stunned silence in recognition of the enormity of his findings. After a long hard day, Don graciously agreed to a comprehensive interview – here is part one of that conversation.

**Graeme:** Thank you for agreeing to this interview. You have just had a full day on stage and a full evening answering questions over dinner. Now, at 10 pm in the evening, you have agreed to talk with me for a couple of hours. Your energy at 82 years of age is inspirational – in fact, you have just become my new hero. I have now decided that my new goal is to peak in my eighties. Do you have a secret to share that has enabled you to sustain such energy and mental agility?

**Don:** Actually, I am not yet back to my best. I am still recovering from a very suspicious “accident” where I was hit by a truck while helping to pull a car from a drain with my tractor. The truck disappeared and the driver I was helping to rescue gave false names and addresses to the police. I was left with a broken back and many other injuries and it has been a long recovery process.

**Graeme:** I guess you have trodden on many toes with your unrelenting search for the truth. I know that I was one of many in the room today who vowed to eat more organic food when we



understood the scale of the glyphosate toxicity issue. Many of us shuddered when recognising the vast contamination of our food chain. Do you try to eat organic food?

**Don:** We have always had our own vegetable garden and much of our food comes from that, and of course it is all organic and well mineralised. I also believe that bread makes a big difference because it is such a big component of most diets. We grow our own, non-hybridised wheat, which is stone ground immediately before baking. It is a very old variety with over 18% protein and a wonderful nutty flavour. It is so different to the current commercial grains.

**Graeme:** I don't think most people are aware of some of the issues with the green revolution grain. Norman Borlaug won his nobel prize for irradiating wheat to fast-track the hybridisation process. He delivered a more squat plant which was much less prone to lodging, but at what cost? The mutant that became our daily bread is much less capable of nutrient uptake and this has compromised the health of many. It is one of the reasons I would rather have an ancient grain like spelt, which is alkalising and much more nutrient-dense. Your open-pollinated wheat sounds like a great choice. What was the name of the variety?

**Don:** It is an old non-hybridised variety called Ridit. My wife can start off with some of this grain and within 8 minutes she can have eight loaves of bread ready to rise and bake.

**Graeme:** My mouth is watering. The smell of freshly baked bread is second only to the sweet smell of a healthy soil. I had better ask some of my soil questions now. You are a much accomplished microbiologist and you have become involved in a legendary David and Goliath battle against the large multinationals driving GMO technology. However, it has been your work with plant nutrition that has seriously impacted my life. One of the books for which you were responsible, *Mineral Nutrition and Plant Disease*, has been something of a bible for me over the years. You have linked mineral balance and nutrient mismanagement to many of the most destructive crop diseases. I was interested to hear that, in one meta-analysis of many studies, you found that nitrogen excesses were shown to increase disease in 233 cases, while improved nitrogen management was linked to reduced disease in 120 cases. I am interested to know which of the two nitrogen forms was most likely to cause trouble – nitrate nitrogen or ammonium nitrogen?

**Don:** The two forms of nitrogen are metabolised quite differently and this impacts microflora. Nitrate nitrogen metabolism generates an alkaline effect in the root zone. In general, the acidifying effect of the metabolism of ammonium N is desirable, but there are some exceptions. Calcium nitrate has been shown to reduce the likelihood of *Fusarium* in melons, for example. However, the nitrate form is known to increase potato scab, so ammonium nitrogen is a much better choice here.

**Graeme:** The ginger growers in our region have recently suffered serious problems with *Pythium*. It seems strongly linked to their move from urea to a more nitrate-based liquid nitrogen. The other main issue with an oversupply of the nitrate form relates to the nutrient dilution factor. Nitrates are taken up with water and this dilutes other minerals and reduces brix levels (which are effectively a measure of nutrient density). We find it is impossible to have high nitrates in the leaf and achieve desirable brix levels.

**Don:** It is important to understand that part of the link between high nitrates and increased insect pressure relates to higher levels of reducing sugars in the plant. These are the kinds of sugar that insects really love. The conversion of nitrate nitrogen to amines in the leaf takes up to 16% of all of the glucose produced through photosynthesis. This is a very energy intensive process and it can

create a carbon stress within the plant. This conversion problem can be further complicated by a lack of molybdenum and this deficiency is very common.

**Graeme:** It certainly is! We find that around 80% of soils around the globe are deficient in this trace mineral.

**Don:** Even if you had enough molybdenum, there is another complicating factor, and that relates to heat, moisture stress and drought. The first enzymes that shut down in dry conditions are the nitrite and nitrate reductase enzymes. That is why you see such high levels of nitrate nitrogen in plant tissue during drought. You have a lot of nitrogen in the plant, but none of it is physiologically available.

*The plot thickens, however, because the high nitrates also tie up manganese. When manganese is bound, then you struggle with sucrose synthase. This is a manganese-dependent enzyme that converts glucose into sucrose. Instead of sucrose, you now have an excess of the reducing sugars, glucose and fructose. The insects rejoice because they just got invited to dinner.*

**Graeme:** How do brix levels, measured with a refractometer, relate to those reducing sugars?

**Don:** You are measuring your sucrose levels with brix. Hence, the higher the brix levels, the lower the insect pressure.

**Graeme:** Thanks for clarifying this. I did not fully understand the issue about reducing sugars.

**Don:** Interestingly, much of the early N researchers never quantified the form of nitrogen involved in their research. It was just called “nitrogen”. Complex mineral interrelationships are often at play when we try to interpret links between nutrition and disease. The potato scab story is a good example. Ammonium nitrogen increases manganese availability. Manganese is hugely important in disease resistance. Rice blast, take-all, root rot and corn stalk rot are all linked to a lack of manganese.

**Graeme:** I am beginning to realise the scale of the problem with glyphosate, because this herbicide impacts manganese availability with a double whammy. It kills the organisms that make manganese available to the plant and it also ties up manganese within the plant.

**Don:** I was involved in research with sugar cane, relative to glyphosate. In this study, we demonstrated that the manganese within the plant tissue is tied up, chelated and immobilised within 4 to 6 hours of the glyphosate application. Plant tissue levels of manganese actually dropped by 90% within that short period of time. The associated effect of this huge drop is an increase of fructose and glucose and a reduction of sucrose within the plant. As I have described, insects are much more attracted to the reducing sugars than sucrose.

**Graeme:** Returning to the nitrogen story for a moment. There are still many agronomists out there claiming that nitrogen is only uptaken in the nitrate form. How does the plant best manage these two forms of nitrogen and is there an ideal balance between the two?

**Don:** There is an ideal balance in the soil. Nitrate will serve as a buffer against ammonia and ammonia against nitrate. The plant can use either form of nitrogen equally well if it just has one and not the other. However, it will always do best if it has access to equal amounts of both.

**Graeme:** Our Soil Therapy<sup>™</sup> soil analysis reports suggest ideal levels of 20 ppm of both forms of nitrogen, but we have not focused upon trying to maintain a 1:1 ratio. That's food for thought.

**Don:** There is a difference between C3 plants and C4 plants, like corn and sorghum. In the C4 plants, the efficiency is in the ammoniacal form of N. The nitrates require a lot of carbon to drive their conversion to protein and, as a result, yield will suffer if nitrate nitrogen dominates.

**Graeme:** I am just thinking about some of these mineral relationships, now that you have highlighted the importance of manganese for disease and insect resilience. I recall a link between silica and manganese mobility. Could it be that the disease resistance linked to the use of soluble silica is actually related to this improved transport of manganese into the plant?

**Don:** There is most certainly a strong link, as silica mobilises manganese. You will see silica move manganese across the cell wall or move it to an infection site. Without this silica push, manganese struggles to get to an infection site in time to help activate the shikimate pathway, which functions to produce the phenolics and other protective compounds that stop that invasion.

**Graeme:** I would like to focus a little more on the shikimate pathway. The grim conclusion from your exhaustive summary of multiple, published papers is that we have made a terrible mistake with glyphosate. We have compromised our entire food chain with this chemical. It is now linked to most of the degenerative diseases and even some of the infectious diseases that are decimating the modern world. It seems to be linked back to this shikimate pathway. Could you please elaborate on this?

**Don:** *The mode of action of glyphosate is to shut down the shikimate pathway. We have now deactivated a major defence system. There are a couple of other pathways involved in resilience, but the shikimate pathway is a major player in protection. In fact, it is essential to life. When you shut down this defence pathway you essentially have AIDS. You have essentially shut down plant immunity. The consequence is an increased prevalence of a wide range of diseases and that is exactly what is happening.*

**Graeme:** *My goodness, it would be a masterly marketing strategy to use one chemical to generate the need for many others. It sounds like some kind of conspiracy theory, but it is effectively what has been happening for many years.*

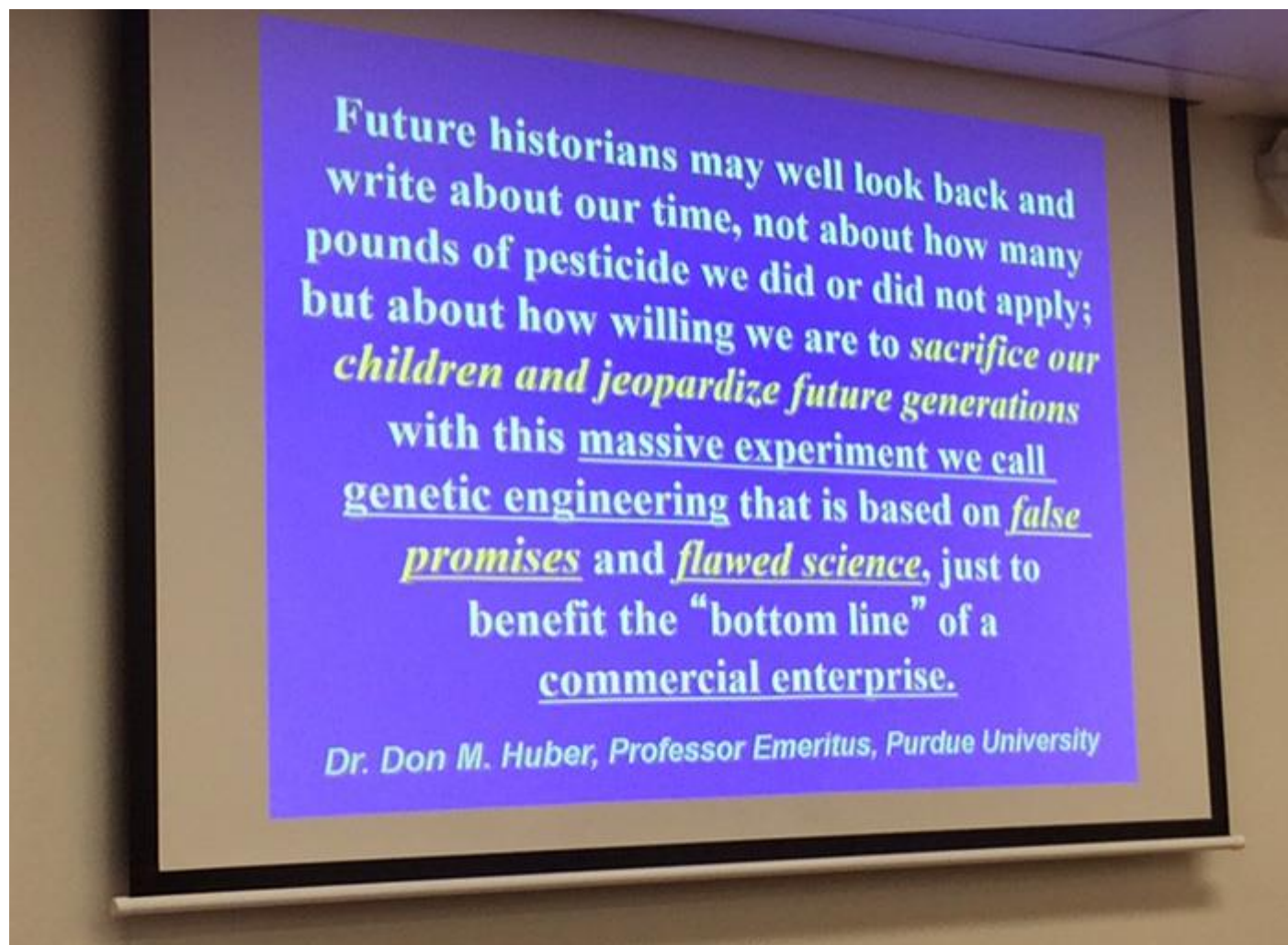
**Graeme:** I see that you have a recent paper where you have demonstrated an increased likelihood for 40 different plant diseases, simply through the use of glyphosate. What do you think it will mean for the multinationals driving this disaster, as the world awakens to the mistake. Will Monsanto still exist in ten years' time?

**Don:** I think they are definitely concerned about their future. We have seen the recent release of the World Health Organisation (WHO) report classifying glyphosate as a "probable carcinogen". Then, more recently, we have seen a report that showed that Monsanto's own research had revealed a predisposition towards seven different forms of cancer associated with their herbicide. There is now a much broader liability that is opening up.

**Graeme:** Are you seriously suggesting that this company were fully aware of the cancer link before foisting this toxin onto an unsuspecting world?

**Don:** According to new data released by highly credentialed scientist, Dr Anthony Samsel, they knew about it right back in 1981. It would be a good idea for your readers to check out the interview with this researcher on mercola.com. It's a real eye opener. The only reason the WHO

report concluded that it was a “probable” rather than a definite carcinogen was because the research has been constantly stifled.



**Graeme:** It is a huge issue for many growers because they believe they are shackled to the glyphosate rig. There is no doubt that this input has made life a whole lot easier for many farmers and no-till has been pretty much glyphosate-based. It will obviously have to go, but as it is slowly forced from the food chain, there are some simple strategies that can reduce some of the negative impacts. For example, if you drop the pH of the diluted glyphosate spray down to a pH of 2.9, you can reduce the amount of the chemical required by up to 30%. If you also combine a little fulvic acid in the mix, you increase membrane permeability (and associated uptake of the chemical). It is important to be pragmatic in these situations. Do you have any suggestions that can help reduce some of the negatives associated with glyphosate?

**Don:** Well, if you grow wheat and use glyphosate, you may have noticed an increase in diseases like ergot and powdery mildew. They are both related to a lack of copper in the plant, because this mineral has been shut down by the herbicide. It can be a very productive strategy to foliar spray copper to help avoid this problem. People misunderstand the use of copper as a fungicide. They drench the plant and often create excesses of this mineral in the soil. 75% of the copper response comes from within the plant, rather than on the leaf.

**Graeme:** I couldn't agree more. We have developed a uniquely chelated, copper liquid called **Nutri-Key Copper Shuttle™**. In one large-scale Spanish trial, this product was tested against the two most common copper fungicides, copper hydroxide and copper oxychloride. There was also a very popular local biological product included in the trial. The Copper Shuttle™ totally eclipsed the



others in terms of fungicidal performance (even though it is not marketed as a fungicide), with a fraction of the copper involved. It is all about getting copper into the plant rather than on the plant, and this is not widely recognised. I consider copper fungicides to be amongst the worst of the bunch, because they so often create soil excesses. Copper does not leach and it can kill much more than fungal pathogens. High soil levels of copper compromise bacteria, beneficial fungi and protozoa. It is a broad spectrum biocide.

On that note, I will conclude the first segment of this interview. I would like to take this opportunity to thank the Healthy Soils Incorporated Group – Rockhampton, who were responsible for bringing Don Huber to Australia, and who kindly provided the photographs for this article.

I trust you have gleaned some pearls of wisdom from this remarkable and courageous gentleman. We should all be grateful when an accomplished scientist stands up to be counted for the benefit of us all.

## REASONS TO BE CHEERFUL – from the New Internationalist



### **Ethiopia blooms despite drought**

Farmers in Adisghe county have defied the country's worst drought in 50 years. In the steep fields of the region's highlands, farmers have built dams, terraces and recharge-ponds to prevent soil loss and to slow the passage of limited water. The result, in the words of a local official, is that 'what was once a desert is now a forest'. Local farmers have cited their success as evidence that the government's original and costly plan to resettle them elsewhere was unwarranted. [grist.org](https://grist.org)

### **Youth sue over climate - USA**

With science on their side, a group of 21 young people aged between 8 and 18 have won the right to sue the US government over climate change. The oil industry attempted to have the case thrown out, but the judge in Eugene, Oregon, ruled the government had a case to answer for 'violating [future generations'] constitutional rights to life, liberty and property' by allowing continued fossil fuel exploitation.

### **King coal deposed – Tar Sands**



After long being the target of environmental campaigns, the Royal Bank of Scotland (formerly one of the world's largest financiers of fossil fuels) has pulled out of funding tar sands and coal, and doubled its financial commitment to green-energy companies instead. The news came in the same week as Peabody, the world's largest coal company, filed for bankruptcy

## **Buy don't burn**

Greenpeace Sweden is planning to keep coal in the ground by buying up mines and power plants and leaving them unused. The group has its sights set on four coal-fired power stations and corresponding mines in Germany and hopes to stop other potential buyers from continuing mining operations. Funds will come via a crowdfunding campaign.

## **Pop-up bike lane**

Cyclists complaining of poor road provision could soon take advantage of a 'bring your own' bike lane. The Xfire laser lights attach to your bicycle, stopping drivers cramping your style by projecting a striking red line on the road either side, making both vehicle and rider more easily visible. Similar ideas have been tried in the past but never made it to market. Let's hope this one has wheels.

## **Solar deal**

A Native American community in Nevada has struck a deal with the Mayor of Los Angeles to sell enough solar energy to power 105,000 homes. The Moapa Band of Paiutes are building a solar farm on their land so they can benefit from the rapacious energy consumption of LA, which relies on a polluting coal-fired power station. The city aims to be coal-free by 2020.

## **Organic spread**

Certified pesticide-free farming has expanded threefold since 1999 to cover 37 million hectares, according to research by the Worldwatch Institute. Some 80 per cent of organic farmers live in the Majority World, with India and Uganda ranked as top producers. The statistic bodes well for sustainability – organic farms can use 50 per cent of the fossil fuel consumed by conventional agriculture, and boost diversity by 30 per cent.

# The duty to care for our common home



**Femke Wijdekop makes the case for Ecocide to become a crime under international law.**



**Portent of doom: a penguin covered in oil following a spill off the coast of South Africa.**

**Photo: Martin Harvey/Alamy Stock Photo**

2015 was an important year for climate lawsuits. The landmark Uganda case in the Netherlands – in which the district court in The Hague ruled that the Dutch government had a legal duty of care towards current and future generations to lower its CO<sub>2</sub> emissions – stimulated NGOs in countries such as France, Belgium and Norway to start similar lawsuits. In the US, eight youth petitioners who requested that the Department of Ecology in Washington State write a carbon emissions rule to protect the atmosphere had their moment of victory on 19 November, when Judge Hollis R Hill ruled that the State has a constitutional obligation to preserve, protect and enhance the air quality for current and future generations.

These rulings give NGOs and citizens powerful tools in their pursuit of climate justice. In 2016, the case for climate and environmental justice might be strengthened in an even more revolutionary way. **Lawyers in different parts of the world are advocating the introduction of a legal duty of care towards the natural world.** These lawyers recognize that our current laws and environmental regulations are failing to protect the natural world

from over-exploitation and corporate abuse. They want to protect the integrity and functioning of ecosystems by making Ecocide – the massive damage and destruction of ecosystems, such as the **Deep Horizon oil spill, deforestation of the Amazon, large-scale fracking or the Athabasca tar sands** – an international crime. Their proposal is to add Ecocide as the fifth crime against peace to the Rome Statute of the International Criminal Court (ICC) in The Hague, alongside crimes of aggression, war crimes, genocide and crimes against humanity.

## Origins of Ecocide

The term 'Ecocide' was coined by US biologist Arthur Galston. In the 1950s, Galston was part of a team of scientists who helped prepare a chemical component for the **defoliant Agent Orange**. When he was confronted with its use in the Vietnam War – **poisoning human health and destroying vegetation** on an enormous scale – Galston turned into a fervent anti-war activist. At the 1970 Conference on War and National Responsibility, he called the massive damage and destruction of the Vietnamese jungle an 'Ecocide'. The word derives from the Greek *oikos*, meaning home, and the Latin *caedere*, which means to demolish or kill. Ecocide thus translates as 'killing our home'.

**Our current laws and environmental regulations are failing to protect the natural world from over-exploitation and corporate abuse**

Galston's plea to stop the Ecocide in Vietnam was picked up by anti-war protesters in the US and Europe. Swedish Prime Minister Olof Palme, during his opening speech at the 1972 UN Stockholm Conference on the Human Environment, called the Vietnam War 'an outrage, sometimes described as Ecocide'.<sup>1</sup> During the 1970s and 1980s, the idea of expanding the 1948 Genocide Convention led to extensive studies within the UN as to which crimes should be included; several countries supported the inclusion of Ecocide. The 1991 draft of the Code of Offences Against the Peace and Security of Mankind (the precursor to the Rome Statute of the ICC) included Article 26, which read: 'An individual who wilfully causes or orders the causing of widespread, long-term and severe damage to the natural environment shall, on conviction thereof, be sentenced...'. In 1995, however, this provision was withdrawn from the draft Code by the International Law Commission. The Rome Statute now only prohibits Ecocide in times of war, which, probably due to its high thresholds, has never been invoked.

**In 2008, Scottish lawyer Polly Higgins set out on a quest to develop a solid legal framework to protect the natural world. She came across the concept of Ecocide and in 2010 proposed that the International Law Commission modify the Rome Statute to include Ecocide.** Higgins defines Ecocide as the 'extensive damage to, destruction of or loss of ecosystem(s) to such an extent that peaceful enjoyment by the inhabitants of that territory is severely diminished'. The term 'inhabitants' can refer to humans or animals residing in the affected territory. She proposes personal liability for CEOs or State officials who are at the top of the command chain and whose decisions result in Ecocide.

Higgins' work to make Ecocide an international crime sparked the creation of a European Citizens' Initiative to petition the European Commission to make Ecocide a crime in Europe. End Ecocide in Europe did not collect the needed million signatures, but it did present the petition at various committee meetings of the European Parliament and evolved into a global grassroots movement called End Ecocide on Earth, with its own proposition for an Ecocide amendment.

**In the academic world, both Australian law professor Steven Freeland and French law professor Laurens Neyret published books in 2015 with detailed proposals to make environmental destruction a crime under international**

law. Canadian philosopher and legal scholar Laura Westra has been researching the criminality of eco-crimes for over 10 years. And Argentinian Nobel Peace Prize winner Adolfo Pérez Esquivel is advocating the establishment of an international tribunal for crimes against the environment.

## Global commons

At the UN climate summit in Paris last year (COP21), End Ecocide on Earth's representative Valerie Cabanes handed over its Ecocide amendment to UN Secretary-General Ban Ki-moon. The amendment focuses on the protection of the global commons – such as the atmosphere, the oceans and seas beyond territorial waters, the Arctic and migratory species. These global natural resources are called *Res nullius* in law: they belong to no-one and should no longer be the scene of pollution and abusive exploitation. End Ecocide on Earth also considers that the destruction of an ecosystem 'service' on which a human community depends is equal to a crime against humanity.

The amendment was used by the International Tribunal for the Rights of Nature in its session at COP21 on the Chevron oil spill in the Ecuadorian Amazon. This People's Tribunal was established in Paris on 4 December 2015 and judges cases on the basis of the Universal Declaration of the Rights of Mother Earth. It found Chevron guilty of Ecocide and called for restorative justice. It also noted that Chevron's directors and corrupt government officials could personally be criminally liable. The judgment carries moral authority and legal weight (the judges of the Tribunal are highly respected lawyers and environmental leaders), but it is not legally binding since People's Tribunals act independently of State authorities. An official, binding UN tribunal on the environment is needed, and Ecuador's president, Rafael Correa, has called for the creation of just such an international court to judge crimes against nature.<sup>2</sup> The call, made at COP21, was supported by Bolivia and Venezuela, but it did not get the support of other heads of state and received little attention in the press.

## What's next?

The focus of both Higgins' and End Ecocide on Earth's work, however, is not to create a new international court – which would cost a lot of time and resources – but to find a head of state who is willing to propose an Ecocide amendment to the International Criminal Court. The treaty of the Rome Statute can be amended if a two-thirds majority (82 heads of state) vote in favour.

Small Island Developing States (SIDS) seem the most likely candidates to move the amendment forward. SIDs are low-lying, coastal countries, mainly islands of the Caribbean Sea and the Atlantic, Indian and Pacific Oceans. They are particularly vulnerable to tornadoes and rising sea levels caused by climate change. They risk losing their entire territories, yet a climate displacement co-ordination facility to help them with future climate migration was withdrawn from the COP21 negotiations. Higgins wants to create a legal duty of care for the international community to give assistance to these island nations. Failure to do so or to stop dangerous climate-changing industrial activity such as fossil-fuel extraction constitutes an Ecocide. With the number of SIDS adding up to over 40, they could form a powerful voting bloc to propose an Ecocide amendment at the ICC.

The destruction of an ecosystem 'service' on which a human community depends is equal to a crime against humanity

If the SIDS take this initiative, they will then need to get enough other heads of state on board to reach a two-thirds majority. It will likely take an enormous amount of pressure from civil society to convince heads of states to make Ecocide a crime, given the extremely powerful lobby of the fossil-fuel and extractive industries.



However, there are developments that suggest society's support for an Ecocide Law will continue to grow in the coming years. There will be a series of People's Tribunals dedicated to different types of Ecocide. **The first one – the People's Tribunal against Monsanto – will take place in October 2016 in The Hague, with Indian environmental activist Vandana Shiva playing a key role. People's Tribunals on fracking, mega-dams, Exxon and other oil companies will follow in 2017. These Tribunals will aim to educate the public about Ecocide; provide witnesses of Ecocide with the opportunity for their testimony to be heard, documented and entered into the public record; and develop arguments and laws that can later be used in national and international courts.**

Another development is the advocacy of Pope Francis for environmental justice. In his encyclical *Laudato Si'*, he calls upon us to care for our common home, on behalf of current and future generations. He warns that market forces are violating the integrity of our natural environment and says it is a mistake to think of other species as mere 'resources' to be exploited, instead of having value in and of themselves. *Laudato Si'* inspired prominent Catholic groups to support young plaintiffs at a federal climate-change lawsuit in the US, after Oregon's District Court granted defendant status to three trade associations representing nearly all the world's fossil-fuel companies.<sup>3</sup> **If the Pope's environmental advocacy continues to mobilize faith groups to get involved in environmental justice, and if these groups dare to cross over to the realm of criminal law, the advocates for Ecocide law might find a powerful ally at their side.**

Femke Wijdekop is a senior expert in environmental justice at IUCN Netherlands and the legal counsel of Stop Ecocide.

*If anyone has information they think should be included in this newsletter, especially about workshops and events, please send me the information in a way that I can copy and paste into the newsletter.*

*Editor, Carol Laing – [newsletter@permaculturecairns.org.au](mailto:newsletter@permaculturecairns.org.au)*

***Membership form next page.***

***Discount membership for 2016 now \$10***

***Come meet some like-minded people and learn how to live on this planet sustainably.***



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



## Permaculture Cairns

### Membership Form 2016

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

- |  |                                       |
|--|---------------------------------------|
| <input type="radio"/> Household membership \$30  | <input type="radio"/> Renewing Member |
| <input type="radio"/> Individual membership \$20 | <input type="radio"/> 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 second month on the Third Tuesday of month Jan to Nov (Second Tuesday Dec). Doors open 6pm, meeting starts at 6.30pm at: ARC Disability Centre, 92 Little Street, Manunda

### Enquiries

President: Jenny McGrath  
Secretary: Peter Spooner [info@permaculturecairns.org.au](mailto:info@permaculturecairns.org.au)  
Treasurer: Craig Phillipson [treasurer@permaculturecairns.org.au](mailto:treasurer@permaculturecairns.org.au)  
Website: [www.permaculturecairns.org.au](http://www.permaculturecairns.org.au)