

Permaculture Cairns Incorporated - Established July, 2007

Web Site: www.permaculturecairns.org.au



Permaculture Cairns News

EMPOWERING COMMUNITIES WITH SUSTAINABLE SOLUTIONS

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

July Meeting & Information Exchange Night

Tuesday 21st July at 6pm for a 6.30pm start

Meeting Venue: ARC Disability Centre – 92 Little Street Manunda

(opposite the park behind Cominos House)

Members please bring a plate of finger food to share and a friend or two!

Financial Members are free, Non Members \$5

AGENDA

Welcome

What's happening this month and next

Permaculture Principle Number 7, a practical explanation.

Guest Speakers: Dr Barb Ford

Short info exchanges:- Book of the Month, Plant of the Month, Tool of the Month, Gardening Tip of the Month

Break for a cuppa, nibbles and a chance to network with like minded people.

Check out the books in our Members Library

Finish 9.00pm

Guest Speaker – “Three weeks on a Kenya Permaculture Demonstration Farm”

Barb Ford did her PDC with Carol Laing in 1992 and is a long-time member of Northey St. City Farm in Brisbane. She is also a public health doctor who has worked with Red Cross in many countries. During a recent mission in South Sudan she spent her 3 week holiday as a volunteer on a permaculture drylands demonstration farm in Kenya. She will talk about her experiences in Kenya and show some great examples of permaculture practice in a very different setting to Australia.

Guest Speaker for last month was Shelley Langford

A big thank you to Shelley Langford for coming to our June meeting to tell us about Home Schooling. A very interesting and inspiring talk with lots of questions answered. Shelley is also a long time member of the permaculture movement. Contact email: michellelangford@bigpond.com

Local Support: Cairns Homeschool group: <http://homeschoolgrouphug.com/cairns-homeschool-group/>

Atherton Tablelands Homeschool Group: <http://australiannorthqldhomeschool.weebly.com/atherton-tablelands.html>

Permaculture Principle No. 7 – Design from patterns to details

“Can’t see the forest for the trees.”

By stepping back, we can observe patterns in nature and society. These can form the backbone of our designs, with the details filled in as we go.

Every spider’s web is unique to its situation, yet the general pattern of radial spokes and spiral rings is universal. The proverb “can’t see the forest for the trees” reminds us that the closer we get to something, the more we are distracted from the big picture.

Biodynamics FNQ Workshop- Sunday 19th July 10am to 4pm

Working with the Biodynamic Planting Calendar

With Cheryl Kemp and Max Brandenburger

How our planetary system works and how it affects our earth, Looking at the 5 lunar cycles, How these specific times affect and work towards better cropping and gardening and animal husbandry. We will walk around Jules and Robs property and see the Community Garden at Ravenshoe.

Venue: Jules and Robs property, Bamboo Solutions, Old Butter Factory, 1 Ascham Street, Ravenshoe

Please bring lunch to share and seats. Teas and coffee supplied.

Enquiries: Hilary Smith 4097 6563 www.biodynamicsfnq.org.au

Hill Top Farm Cooktown - August 1 – 2 2015

Thinking like an Ecosystem

Improve your ability to make decisions collaboratively, delivering better futures for our communities, environment and rapidly changing business world. Taking a systems approach helps us deliver benefits for the long term and avoid unintended consequences. Join Pam McAllister and Dr Eric van Beurden, leaders in providing communities with a systems perspective, for a relaxed weekend combining your professional development with an opportunity to discover Cooktown.

Contact:- Dr Wendy Seabrook, PO Box 943, Cooktown, Qld 4895

hilltopfarmcooktown@westnet.com.au Call 07 4069 5058

Michael Alba Workshop - Mareeba - Sunday 26th July 2015 1pm-5pm

Growing Fruit Trees for Self-sufficiency

Includes propagation, planting, watering, fertilizing, maintenance and pruning organically.

Venue: 17 Middlemiss Street, Mareeba – For information Phone Michael or Lindy 40921116 or 0429175328

Fee: \$30 Bookings not required Afternoon tea provided.

NEWS ITEMS FROM HOME AND AROUND THE WORLD

Is it time to look at Transition for Cairns?

The [Transition Streets Challenge](#) is an exciting street level program bringing neighbours together to explore ways of reducing their environmental impact while building a more connected neighbourhood. Although it is called the Transition Streets Challenge, groups aren't restricted to one street but can include people from neighbouring streets (hopefully within easy walking distance). As one of the participants said "my community isn't necessarily the people who are on the other end of my street, but those around me, the people I bump into, who have chickens or lemons or a vacuum cleaner to share."

Created by [Transition Newcastle](#) (Australia) we hope that the Transition Streets Challenge will:

1. Encourage households to become more sustainable
2. Bring neighbours together and to build strong local connections that will lead to ongoing action
3. Engage households not already moving towards sustainable lifestyles.
4. Help streets discover what they can do together that they can't do alone
5. Promote broader community education and engagement.

Transition Newcastle was highly commended (a runner up) for the Transition Streets Challenge at the 2013 [NSW Sustainable City awards](#). According to the judges report:

- *The focus on the community was clearly one of the highlights to the program. The submission involves everyone within the community and produced great results*
- *The innovation of the program was first rate. The program is a fantastic idea that involves thinking outside the box and is one of the major strengths of the program.*
- *The transferability of the program was another highlight. The set up of the program is simple and effective allowing easy of transferability between suburbs and councils.*

The Transition Streets Challenge was inspired by a number of other programs particularly [Transition Streets](#) in Totnes, UK. The CSIRO's [Energymark program](#), and [Sustainability Streets](#) also demonstrated the possibility of street-based discussion groups, while various community led initiatives – like the Painted Fish and [Hulbert Street](#) in Fremantle and [Café 101](#) in Tighes Hill – showed the potential of neighbours coming together. Drawing on these inspirations we've created a varied program:



From the food chapter

- A practical, easy-to-read workbook is the basis for discussion within the streets. The workbook has chapters on energy, water, food, transport and consumption & waste. Each chapter includes background information, ideas for action, ways to involve children, fun and thought provoking challenges, and further resources.

The thought provoking challenges highlight how we take many resources and the environment for granted. Examples of challenges include: using water from a bucket for a day, seeing how many cars the group can keep off the road for a week (e.g., by shopping together, carpooling) and putting 20 cents in a jar every time someone opens the fridge to see how much is collected by the end of the day (or week). Households choose which challenges they want to try, and the focus is on thinking about issues, having fun and building community.

1. **For one day a week** - Choose one day (or more) per week that you decide to make 'car free'. How many weeks can you do it?
2. **For one week** – As a group, see how many cars you can keep off the road for the week. Share your car with neighbours, offer to take them shopping when you're going, etc.
3. **For one week** – Break the habit! Find alternatives to using your car for all your trips for the week. What alternatives did you try? What worked well? Could you continue some of these new-found alternatives
4. **For one month** – Record how much you use the car. For each trip, write down how far it was. How many of your trips were under 2 km? How many trips could you have done differently if you had really needed to?

Challenges from the transport chapter

- Streets are encouraged to craft creative responses that help them become more sustainable. Each month focuses on one of aspect of sustainability and the streets are invited to think about how they can work together to make a difference.



Community garage sale

- Street events such as film nights, street parties and local food dinners help create interest in the street and bring neighbours together. One of the real benefits of the program is the strengthening of [social capital](#) within the neighbourhoods.

The best thing has been feeling more connected with the neighbourhood and having a greater responsibility for the neighbourhood. I want to continue to learn and be part of a new sustainable initiative with the community. I want to learn from others and to share that information. My life has been enriched by being part of the challenge. (Transition Streets Challenge participant)

An overall sense of safety was created... in one instance the students ran out of the house to protect a neighbour who was about to be assaulted. (Street contact)

Transition Newcastle also organises films, workshops or other activities that link in with the chapters of the workbook so participants in the Challenge can learn more or be inspired by what others are doing.

And you realise how everybody's trying to do their best with what they're doing. And then you find that someone's doing this and that and, "Oh I haven't thought of doing that. I should try that." (Transition Streets Challenge participant)

Each street is autonomous and is free to do the Transition Streets Challenge as they want. Generally streets meet about once a month to discuss a chapter from the workbook and they might also arrange some other activity in between the discussions (e.g., a shared meal or a film night). There is the potential for people in the street to be involved to different degrees. Some people will join in the discussions based on the

workbook, while others might only join in some street events or projects. The discussion groups can't be too big as they need to be able to fit in somebody's living room or back deck, and to allow for easy discussion.

Transition Newcastle provides support to the streets throughout the program by attending the first session (if the street group wants us) and can help with advice, resources and contacts. We also host regular meetings of the street contacts so that they can learn from each other. Street contacts have found these very helpful in allowing them to discuss what is working and what has been difficult, share ideas, and support each other. Some people find initiating the Transition Streets Challenge in their street fairly daunting and they appreciate knowing they are not alone and gaining ideas from other contacts.

As soon as I heard about of it I went "Oh, that sounds really good", but part of me was hesitant "I've already got too much to do, how am I going to do it." But my gut just said "Oh just go for it and do it, it sounds right up my alley." And it is right up my alley... My advice to somebody thinking about it is "Just do it!" (Street Contact)

Although it is called a "Challenge" it is not a competition or a challenge between streets and households: it is a challenge neighbours take on together. The challenge is about how we can become more sustainable; not how we can do better than other people. Cooperation, a non-judgemental attitude and openness are important foundations the groups to work together successfully. In the introductory chapter of the workbook we emphasised the importance of cooperation:

A major part of the Transition Streets Challenge is cooperating with your neighbours and so it is important to ensure your discussions and activities are a positive experience for all involved. The following are some practices (most of them fairly obvious) that could help make the Challenge work successfully. Respect will be at the heart of a successful Transition Streets Challenge. People will come to the Challenge with different backgrounds, experiences, beliefs, commitments and priorities. This diversity can bring richness to our community (and the Challenge) and we need to respect differences. We can help show respect by:

- *Letting everybody have a say and actively listening to them.*
- *Being reliable, trying to do what you say you will do, and letting people know if you can't.*
- *Being understanding when other people can't do what they said they would do.*
- *Being committed to the process.*
- *Respecting people's privacy.*
- *Offering practical and moral support to your neighbours.*
- *Respecting people's differing levels of involvement. (Transition Streets Challenge workbook)*

We are currently working on creating a national edition of the workbook so that it can be run in other towns and cities and are really excited by the potential of the Transition Streets Challenge to make a difference to streets. We look forward to seeing where it goes.

It brings people who have diverse backgrounds together in a different kind of way and I like that. I've always liked mixing with all different kinds of people and this is great for that... Everybody has their own particular character and talent, and it is really good to hear what they're doing and going "oh how did

you do that?” or “where did you learn that?” Everyone has an interest in a different side to it so I find that really interesting. (Transition Streets Challenge participant)



If you liked this post you might want to subscribe to the blog (top right-hand corner of the blog), and you might like to look at:

1. [All posts about the Transition Streets Challenge](#)
2. [Transition Streets Challenge – comments from coordinators](#)
3. [The Transition Streets Challenge: Potential and challenges](#)
4. [Take a street and build a community](#)
5. [“We didn’t just build a garden, we built a community”](#)
6. [What is asset-based community-driven development \(ABCD\)?](#)

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This is a short extract from an interesting article in the online newsletter “The Conversation” about viruses including Ebola and Mers and about the times when one is most infectious and the benefits of vaccines. The full story is at web address at the end of the article.

Health check: when are we most likely to catch viral diseases?

Viruses cause all kinds of infections from relatively mild cases of the flu to deadly outbreaks of Ebola. Clearly, not all viruses are equal and one of these differences is when you can infect others.

Vaccines, in fact, are one of the best ways to control the spread of viral illnesses. Consider the numerous childhood illnesses that are now contained thanks to vaccines.

Measles and chicken pox, for instance, are classically identifiable by their distinctive rashes. But they’re most infectious in the time between the appearance of non-specific symptoms, such as fever, runny nose and cough, and the development of this rash. This made it very difficult to control their spread until [vaccines were developed](#).

As you can see, different viral diseases are most infectious at different times and this timing of contagiousness plays a key role in how successfully the diseases spread. Knowing a virus' most infectious

period is vital for working out the kinds of measures that are likely to work to control and perhaps even eradicate it from the community.

http://theconversation.com/health-check-when-are-we-most-likely-to-catch-viral-diseases-36555?utm_medium=email&utm_campaign=Latest+from+The+Conversation+for+July+7+2015+-+3068&utm_content=Latest+from+The+Conversation+for+July+7+2015+-+3068+CID_bf4728db17650af06570f1fffd6dcde9&utm_source=campaign_monitor&utm_term=Health%20Check%20when%20are%20we%20most%20likely%20to%20catch%20viral%20diseases

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THE INTERNATIONAL YEAR OF SOILS

There have been a few studies over 15 years of the condition of our Australian soils but practices haven't changed much in that time.

It is essential that our soils are able to function as a vital living system. Land use must be decided so ecosystems, biodiversity, wild life environments, water quantity and quality are maintained. Farm practices must be changed to prevent the destruction of organic matter and micro organisms in the soil. If these important changes are made then the soil can sustain biological activity in a healthy state which will promote plant growth which in turn will provide for animal and human life.

We need to take this out of the political arena and stop talking about it and get on with the job of changing to a more sustainable way of farming. Respect for nature is vital we only have this one small planet. Carol.

There are three articles on soils which you may find interesting.

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Soil is the Stomach of the Plant



by [Patrick Holden](#), originally published by [Sustainable Food Trust](#) | APR 21, 2015

I am a long-standing farmer and representative of the organic movement, but it is only recently that I have come to see just how much microbiology permeates every aspect of our lives. Although theoretically and mechanistically I knew this a long time ago, and was aware of the importance of soil biology and mycorrhizal fungi, it was only in 2012 that it really began to dawn on me how understanding the intimate, biological and symbiotic processes involved in my own digestion sheds light on the equivalent processes taking place in the soils of my farm.

In 2012 I heard a conference speech by Patricia Quinlisk, Head of Public Health in Iowa, about the remarkable

recovery rate – up to 80% – of patients with digestive infections after they had received **fecal microbiota transplants**. Where antibiotics had been detrimental to their health, introducing healthy bacteria from stools had restored their colonic microflora.

It was through understanding that the human body is a biome – by definition, a large, naturally occurring community of flora occupying a major habitat – that I realised the full meaning of soil life and how

interconnected it is to all other ecosystems. The dark mysterious world of soil biology is rarely brought to the daylight of people's understanding, even in the organic movement, due to the assumption that this is reserved for the in-depth investigations of soil scientists.

The attention to soil during this [International Year of Soils](#) and the Berlin [Global Soil Week 2015](#) will hopefully bring some of the fascinating discoveries of soil science to wider public awareness. However, if we understand this science only in terms of the earth beneath our feet, we miss out on seeing the awe-inspiring interconnectivity of soil with the rest of life.

Parallel digestive systems

The key concept that has changed my thinking on farming is to understand that the soil surrounding a plant's root zone is effectively its digestive system, or 'stomach'. Building on this parallel, my body breaks down the food I eat in an internal and, mainly, but not exclusively, anaerobic process that involves symbiotic communities of bacteria, which occupy the stomach, small intestine and large intestine. Nutrients are absorbed through the huge surface area of villi lining the gut, a process that is mirrored in the soil, although with plants the absorption is outside-in rather than inside-out. It is in this sense that the soil and its bacterial and fungal community can be seen as analogous to an external stomach of a plant, since these organisms, including a network of mycorrhizal fungi, play a central role in breaking down organic matter into absorbable nutrients, which are available to plants through their large surface area of root systems.

Although these processes in the body and in the soil function differently, there is a fundamental link – the digestive system. This system refines and transforms the material from one organism, which occupies a low place in the food chain, to nourish another, further up the ladder. Through digestion, organic materials are broken down and transformed into new life forms: the soil biome nourishes the plant through complex digestive processes in the topsoil and rhizosphere, and the plant matter in turn becomes animal flesh as it is transformed through another biome, in this case an internalised gut. The health of all these interconnected organisms is, therefore, centrally dependent on the health of their digestive processes.

The secret world of microbes

At the microbiological level, there is something utterly compelling about the digestive process. This microscopic world opens up a new dimension of understanding in relation to the health connections between the life of the soil and the organisms that live inside our bodies. In the human gastrointestinal tract, approximately 1.5kg–2kg of non-human life forms, mostly beneficial bacteria and also other microorganisms, help with the process of digestion, enabling the subsequent absorption of short-chain fatty acids, while living off the energy produced by the fermentation of undigested carbohydrates.

As well as digestion, microbes perform various other vitally important roles in regulating the immune system and preventing colonisation by pathogens. The study of microorganisms, through research such as the [Human Microbiome Project](#), has opened up new doors for understanding health. Similarly, the [Earth Microbiome Project](#) is systematically characterising the microbial diversity across the planet.

Even mainstream soil scientists are now beginning to present us with a new and clear message that microorganisms are crucial for soil health – even though we are only just coming to realise how important they are also for our own health. The layer of healthy topsoil, thriving with microorganisms, which covers much of the land's surface, is in effect a vast digestive system – the collective stomach of all plants, breaking down soil nutrients into bio-available forms that plants can absorb. The rhizosphere, or root ball, is the gut of the plant and the zone where plant roots and soil organisms interact in a whole variety of biotic,

symbiotic and pathogenic relationships to enable these organisms to do their work. [Plants secrete weak acids to dissolve minerals in the soil then draw these back up in solutions. They also secrete a portion of their photosynthetic energy](#) through their roots as chemical exudates in the form of carbohydrates and proteins, which attract and stimulate the growth of bacteria and fungi.

Without the presence of microorganisms, the mechanics of the digestive system can still function to a certain degree. Purging our intestines of microorganisms through antibiotic use will not stop us from digesting food, just as bypassing the soil ecosystem through using chemical fertilisers or hydroponics will still stimulate plant growth. However, the long-term vitality and health of plants, animals and people is centrally dependent on the presence and diversity of microorganisms, in the soil and gut respectively.

Soil microbial communities are considered the most biodiverse in the world and it is estimated that a single teaspoon of garden soil may contain thousands of species, a billion individuals and one hundred metres of fungal networks. However, only 1% of microbes that live in the rhizosphere have so far been identified by scientists due to difficulties in getting them to grow in the laboratory. “We know more about the stars in the sky than about the soil under our feet,” says US microbiologist Elaine Ingham. Despite the lack of scientific knowledge of the specificities of soil microorganisms, the impacts of destroying soil biodiversity by failing to maintain sufficient organic matter, the overuse of chemicals and heavy tillage are obviously detrimental for soil health and fertility.

Microbiomes as the key to good health

The [biodiversity of the organisms](#) in our guts is also crucial for maintaining health. In the human microbiome, this is determined by the specific condition of each section of gastrointestinal tract. However, the compositions of microbial communities are different among people, because the ecological conditions of individual intestines are distinct depending on age, body condition, diet, lifestyle, geography and cultural traditions. Gut microbiomes are unique to each person – a kind of microbial fingerprint. Modern diets with high sugar content and processed foods, along with increased [antibiotic use](#), have been shown to be detrimental to gut microbiota, which, conversely, can be improved through diets that feed the microorganisms that keep our guts healthy.

The realisation that when I eat I am not actually directly feeding myself but a diverse community of microorganisms upon which I depend for my health, has drastically changed my perception of how my interventions as a farmer can have a similar effect on the soils over which I have temporary stewardship. Every action, from crop rotation and feeding soil bacteria and fungi with composts or manures, to aeration and careful timing of grazing and cultivation, has the capacity to enhance or diminish soil life.

This new understanding has been mirrored in the scientific community. Until very recently, the mainstream understanding of food and agriculture has been through the lenses of reductionist chemistry and engineering, while biology has been largely sidelined or ignored. The popularised ‘microbe revolution’ and increased scientific research in microbiology has put the spotlight on linking an understanding of the human biome with the microbial life in soil. However, as with all scientific advances, there are different ways of interpreting and using this knowledge for both the good and ill health of the planet. If we consider the ‘nature as teacher route’ when feeding the soil with compost, we literally feed it with living food that contains a whole range of bacteria and fungi. This starkly contrasts to the biotechnology route in which synthetically bred microbial solutions are being hailed as the manufactured probiotics of the plant world, which aim to increase chemical fertiliser uptake. Similarly, if we eat patented synthetically manufactured

probiotics, we bypass the diversity and potency of eating living foods such as fermented foods. For example, it has been shown that one 16-ounce serving of sauerkraut is equal to eight bottles of high potency probiotics!

We need to be really open to all scientific and technological advances, yet remain extremely vigilant of the purposes they serve. There is huge potential for harnessing new knowledge in ways that can help us address the ecological crisis, yet there is also the danger of exploitation by vested interests, which view nature's capital as a resource to be exploited.

My personal soil challenge is to continue to explore how an understanding of soil, in all its extraordinary dimensions, can inform my future farming practices and deepen my relationship with soil in a way that increases its health. Every farming practice has an impact and every day, as a farmer, I have the possibility of deepening my knowledge, perhaps simply by walking on the earth and learning through my feet. Through doing so I am increasing my intuitive understanding of the consequences of my actions on the soil.

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From The Conversation

[Science can drive the sustainability of our precious soils, water and oceans.](#)

This article is part of our series on the [Science and Research Priorities](#) recently announced by the Federal Government. You can read the introduction to the series by Australia's Chief Scientist, Ian Chubb, [here](#).

John Gunn

Chief Executive Officer of the Australian Institute of Marine Science

Australia's soil, water, vegetation and biodiversity, and our vast marine estate, are incredibly valuable national assets. They are fundamentally interconnected components of the continent's diverse, unique and in many instances fragile ecosystems.

As such, they need to be managed effectively. However, significant gaps in our understanding of each of these components, and the ways in which they interact, need to be addressed to support effective management.

The Australian Government's [Science and Research Priorities](#) recognise these gaps. They call for focusing of our efforts on critical systems such as the Great Barrier Reef, Northern Australia, key agricultural regions, aquifers and urban catchments.

And they identify priority research that will lead to:

1. New and integrated national observing systems, technologies and modelling frameworks across the soil-atmosphere-water-marine domains
2. Better understanding of sustainable limits for productive use of soil, freshwater, river flows and water rights, terrestrial and marine ecosystems
3. Minimising damage to, and developing solutions for, restoration and remediation of, soil, fresh and potable water, urban catchments and marine systems

The output from investments in these priority areas will be an enhanced capacity for predicting the impacts of global change and of development on natural systems. Importantly it will also provide much needed understanding of the adaptive capacity of terrestrial and marine ecosystems.

This improved evidence base should in turn provide for better decision making strategies in the context of potentially conflicting demands between development, the environment and landscape management.

Neil McKenzie

Chief Research Scientist, CSIRO Agriculture Flagship at CSIRO

Unprecedented demands are being placed on the world's soil resources, and by 2050 they need to support a 70% increase in food production. However, arable land is finite and major crops are reaching yield plateaux. Better soil management is needed to conserve nutrients, improve water-use and reduce emissions. Climate change also compounds the situation.

Some of Australia's soil management challenges are immediate and obvious, such as widespread soil acidification of cropping lands. Others are more subtle but just as important, such as erosion and nutrient imbalances.

We need to improve soil management across the continent. This requires new diagnostic systems for determining when and where soil function is being compromised. Australia also needs more effective institutional arrangements for providing information on the condition of our soil resources.

Research investment in these areas will generate large economic returns through increases in agricultural productivity and avoided costs in other soil-dependent industries. This is before we consider the equally large environmental benefits.

At the global scale, improved soil management is needed in nearly all countries. Without these changes, food-price volatility is likely to increase and this will potentially send millions of people into poverty. This is avoidable but only if there is a concerted response by individuals, the private sector and governments.

Paul Bertsch

Deputy Director-Science of Land and Water Flagship CSIRO and Honorary Professor of Soil and Environmental Sciences, University of Queensland

The [Soil and Water research priority](#) represents a critical area of research having significant national and international benefits, outcomes and impacts, as well as being one that differentiates the Australian R&D enterprise from most other global R&D efforts in several ways.

First, specific recognition of the soil resource is not common in national strategies. This is even though soil is a non-renewable resource (on multi-generational time scales) that underpins key life support systems, such as nutrient cycling, carbon sequestration, food, fibre, animal feed and biofuel feedstock production. It also represents one of the earth's most complex and biologically diverse ecosystems.

A healthy soil resource is also inextricably linked to water quality and quantity as well as serving as a major source of novel antibiotics, anticancer drugs, and enzymes which provide multiple benefits to society;

Secondly, having a research priority that links the soil resource with water resources, including surface and groundwater as well as marine systems, explicitly provides recognition of the controls, interconnectedness and feedbacks between these critical life supporting resources

Finally, combined research priorities amplify the requirement to manage these resources, integrating multiple land uses across natural and managed ecosystems and catchments, that involve agriculture, resource and energy extraction, urban and peri-urban uses, necessarily requiring a full life-cycle consideration of cumulative impacts to soil and water resources, including estuaries and marine systems.

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Also from The conversation on the 28th January 2015

[Deep but not dead: how tropical subsoil microbes could affect the carbon cycle](#)

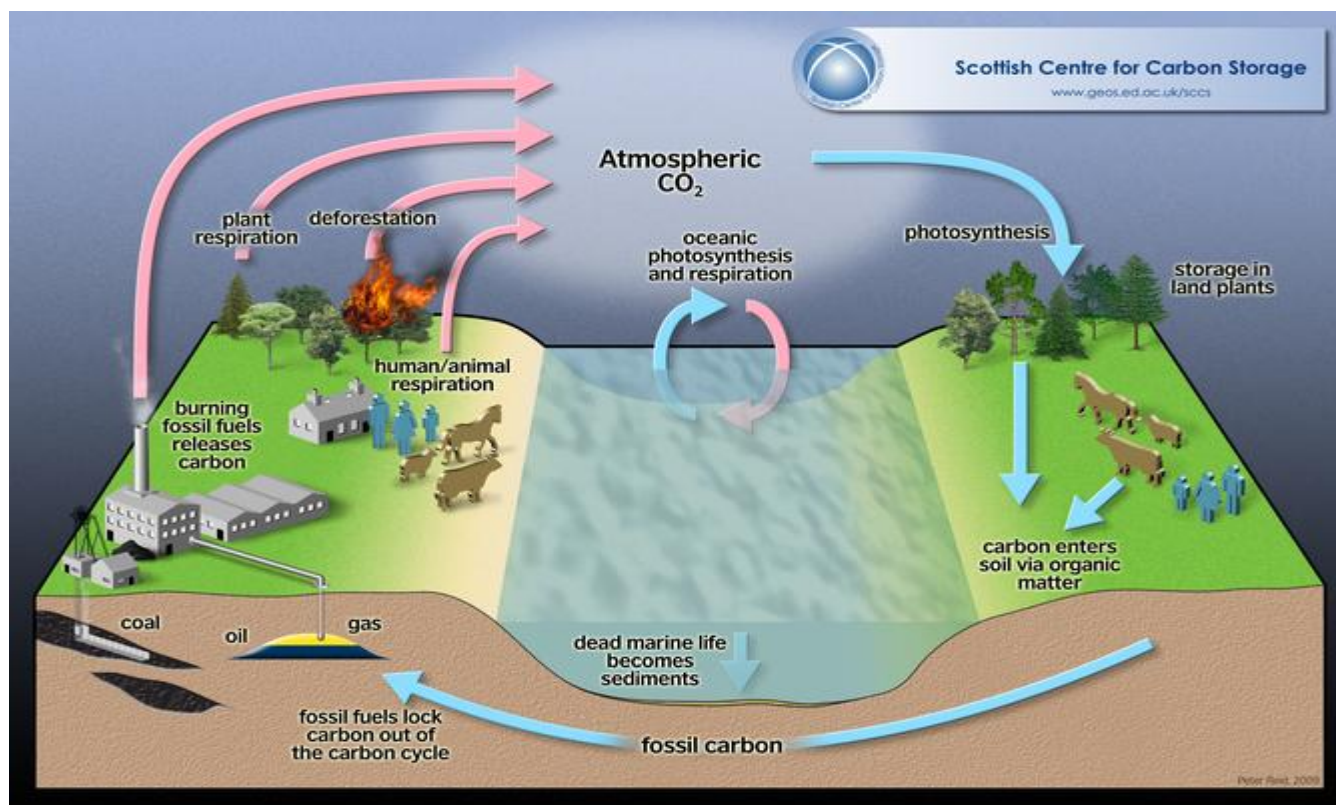
It's no exaggeration to say the tropics drive our planet's carbon cycle – the constant transfer of carbon back and forth, on a global scale, between living things and the environment. Understanding the dynamics of the carbon cycle is increasingly important because more carbon in the atmosphere increases the warming greenhouse effect.

Rainforests are known for their unparalleled biodiversity, but they also pull [more CO₂ from the atmosphere](#) than any other terrestrial ecosystem, helping to keep our climate in the stable state we've enjoyed for the past 10,000 years. But overlooked beneath the lush green canopies lies a big piece of the carbon puzzle: the soil.

Tropical forest soils [contain more carbon](#) than all living vegetation on Earth. And we'd like to keep it that way. Not only does organic matter — a mixture of decomposed plant, animal and microbial molecules — build soil fertility, it locks up carbon that might otherwise end up in our atmosphere. Keeping soil carbon in the ground, particularly in the tropics, is critically important to maintaining Earth's climatic stability.

In some parts of the soil, notably the deep soil, carbon seems to be doing a pretty good job staying put on its own. Here, you're apt to find soil organic matter that's been sitting around for [hundreds to thousands of years](#). It's appealing, then, to call these subsoils a long-term carbon sink.

But a critical question remains with regard to how locked away that soil carbon really is: can microorganisms — the biological engine that drives the soil carbon cycle — actually decompose this ancient organic matter? If the soil microbes can decompose some of it, metabolizing it for energy, some of the previously sequestered carbon would eventually wind up in the atmosphere as carbon dioxide. And that could be a big problem for the climate.



Carbon cycles through living things and the environment. [Sahmed1890](#), [CC BY-SA](#)

[Click to enlarge](#)

To answer that question, I traveled to the Luquillo Critical Zone Observatory, an environmental “laboratory” located in the world's most extensively studied tropical forest, in northeast Puerto Rico. Here, I investigated how microbial metabolism changes as we dig deeper.

Beneath organic-rich surface soils, the subsoil contains small amounts of very old – and potentially very stable – carbon that’s been there for thousands of years. What sorts of microbes live down there? What controls their activity? And if tropical subsoils are biologically active, is subsoil carbon really as stable as we think?

Digging for data in the dirt

First, my colleagues and I spent weeks traipsing up and down the mountains, identifying sites with distinct geologies and plant communities at different elevations. Within each site, we dug holes a meter and a half deep, collecting samples from discrete depth layers for chemical and microbiological analysis back in the lab.

Everywhere we dug, microbial activity, soil carbon and nutrients dwindled rapidly with depth. This we expected: Over large areas, subsoils hold vast pools of carbon, but actual carbon concentrations dwindle rapidly away from the surface. And as their food supply diminishes, so does the amount of microbes.

What surprised us was that even in the deepest, most carbon-starved soils, [microbial activity didn’t disappear](#). Rather, subsoil microbes were ready and waiting to cycle soil carbon and nutrients. Exoenzymes — proteins that break down large, complex molecules into smaller ones that can pass through cell membranes — remained active. On a per-microbe basis, soil respiration – the collective CO₂ “exhale” of microbial metabolism – was equal or greater in subsoils than at the surface.

Microbes at the ready

In total numbers, the subsoil contained less carbon and fewer microbes. But on a per-capita basis, subsoil microbes were capable of cycling carbon and nutrients, at rates equal — or even exceeding — their surface counterparts.

How could this be? In resource-poor subsoils, any metabolic process comes at a steep energetic cost. In such environments, [microbes often go dormant](#) and wait for fairer weather. So what’s causing microbes to maintain their metabolic machinery here?

For one, deep soil microbes may have adapted to exploit resource-poor environments. High per-capita microbial activity in subsoils could also be a stress response. Much like car engines, biological systems perform less efficiently as conditions get worse. Microbes that are stressed due to low energy availability may, paradoxically, respire more carbon as CO₂ for each molecule they actually use. Or they may produce more enzymes to harvest increasingly scarce resources.

Climate implications

Soil microbes are critical drivers of Earth’s carbon cycle. But in deep tropical soils, we still don’t know what controls them.

My research shows how tropical subsoil carbon, typically considered stable, may in fact be biologically vulnerable. Small changes in microbial carbon metabolism could have a huge effect, integrated over all the carbon present in tropical subsoils. Releasing as CO₂ all the carbon currently locked up in these subsoils would have devastating effects on the planet’s climate.

What sorts of environmental changes might amp up subsoil metabolism? Climate-induced soil warming, for one, which makes it easier for enzymatic reactions to occur. A recent [modeling study](#) shows how soil carbon losses over the 21st century vary dramatically depending on the microbial response to temperature. Other climate change feedbacks, including increased root carbon production under elevated atmospheric CO₂, could also [stimulate soil biota](#).

Land use change is another persistent threat in the tropics. Conversion of forests to pasture can expose subsoils that haven’t seen the light of day in hundreds or thousands of years. Will ancient, “stable” carbon become susceptible to loss?

These are the questions that need to be answered. Compared with temperate and boreal regions, tropical forests remain a poorly studied microbial ecosystem. Field experiments that simulate anthropogenic drivers

— climate change, deforestation — are [virtually nonexistent](#). Until we can predict how tropical microbes will respond to global climate change, we can only guess at how the vast carbon pools beneath our planet's most productive forests will shift over the 21st century and beyond.

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News Releases from our Government

TITLE: ARENA announces new priorities | Australian Renewable Energy Agency

PORTFOLIO: Industry

URL: <http://arena.gov.au/media/arena-announces-new-priorities/>

SNIPPET: The Australian Renewable Energy Agency (ARENA) today announced five priorities for new investment and a new, streamlined funding programme structure. 'The five priorities represent current market imperatives or opportunities and are the main areas where ARENA investment can have the greatest impact at this point in time,' Mr Frischknecht said. 'To date, ARENA has invested \$1.1 billion in 230 renewable energy projects across the innovation chain, with each funding dollar leveraging close to two dollars of funding from other sources these targeted priorities will allow us to build on our existing portfolio, creating the conditions that will accelerate change.'

TITLE: Pages - 14 July 2015 Emergency + App for more Australian mobile phones

PORTFOLIO: Attorney-General's

URL: <http://www.ministerjustice.gov.au/Mediareleases/Pages/2015/ThirdQuarter/14-July-2015-Emergency-App-for-more-Australian-mobile-phones.aspx>

SNIPPET: Today I am launching the Microsoft Windows version of the Emergency+ app for smartphones, extending this potentially lifesaving app to virtually all Australian smartphones. Sometimes mobile phone users are not aware of their location even on a city street - making it difficult for emergency call operators to accurately dispatch emergency services. Since I launched Emergency+ in December 2013 it has been downloaded more than 270,000 times and is already saving lives. It has directed emergency services to car accidents, a quad bike accident in remote Western Australia, and a woman who suffered a snake bite..

TITLE: Wave power inspired by nature coming to Victorian waters | Australian Renewable Energy Agency

PORTFOLIO: Industry

URL: <http://arena.gov.au/media/wave-power-inspired-by-nature-coming-to-victorian-waters/>

SNIPPET: BioPower Systems Pty Ltd (BioPower) has finished constructing its prototype wave power unit to be installed off the coast of Port Fairy, Victoria, later this year. 'If successfully installed, it will be the second ARENA supported wave energy device supplying energy to a major Australian grid, feeding 250kW of renewable energy into the National Electricity Market. The design was inspired by undersea plants and the entire device can lie flat on the seabed out of harm's way during bad weather. 30.06.15'

TITLE: Focus on developing and safeguarding the north in ag white paper

PORTFOLIO: Agriculture

URL: <http://www.agricultureminister.gov.au/pages/media-releases/developing-safeguarding-north-in-acwp.aspx>

SNIPPET: Minister for Agriculture, Barnaby Joyce. Member for Leichhardt, Warren Entsch. Commonwealth of Australia 2015 |.

TITLE: Australians lose \$45 million to scams in 2015 | ACCC

PORTFOLIO: Treasury

URL: <http://accc.gov.au/media-release/australians-lose-45-million-to-scams-in-2015>

SNIPPET: The Australian Competition and Consumer Commission is urging the community not to send money or personal details to strangers after \$45 million was reported lost to scams already this year and 45,000 complaints made. 'Our new Scamwatch website, which is being launched today, has all the latest news and tips to help you identify and avoid scams. 'For the first time, the ACCC has published data on common scams that are causing the most harm in Australia, which will be updated every month on Scamwatch.'

Look what is happening in America - Future proofing America with a Yardfarming Revolution by [Erik Assadourian](#), originally published by [Yardfarmers](#) | JUL 9, 2015

Yardfarmers creator Erik Assadourian sat down with Cullen Pope, editor of EATT Magazine, a few weeks back and we wanted to repost the interview here. EATT Magazine shares stories about passionate, generous spirited people, and the journeys they make in our world and work to encourage more people to be a force for positive change, wherever they are.



Last week, we joined Erik Assadourian, creator of the upcoming reality TV show [Yardfarmers](#) and asked him why in the world a sustainability researcher would jump into the baser world of reality TV.

Cullen: Erik, quite simply, why would you?

Erik: Fair question! And one I've asked myself many times as I've navigated the world of reality television over the past year.

I've been a researcher at the Worldwatch Institute for over 13 years, writing on a variety of sustainability issues and urging people to change course, along with many others. But in this time the state of the world has even more challenges with the global population growing by 75 million each year, more people become consumers (which is actually celebrated!), and climate change has passed beyond the point of gentle management.

The idea that we'll be able to maintain and even expand the consumer economy in this scenario is absurd—driven more by magical thinking than by ecological realities.

Hence, over the past few years my work has increasingly focused on opening up a political space to discuss the taboo topic of “economic degrowth.” Essentially how do we intentionally contract overdeveloped economies like the United States and Australia to get back within ecological limits while preserving the best elements of modern development (antibiotics, vaccines, democracy, etc.)? Not making these proactive steps will mean that the planet will do it for us, and the Earth will do it in far less comfortable ways than we'd choose.

Cullen: So what does yardfarming have to do with this?

Erik: Right now, most Americans are almost completely dependent on the consumer economy for their livelihoods and the global food trade for their sustenance—even getting apples from Australia and New Zealand when apples are in season right in their own communities. This has led to massive environmental

problems, from factory farms and food miles to over reliance on pesticides, fertilizers, and GMOs. It's also led to many health issues, including the obesity epidemic and related diseases like diabetes and heart disease—caused in large part by too much time sitting at desks or in cars, and too much food available, especially unhealthy foods while healthier vegetables are either inaccessible or relatively too expensive.

So how do we create new jobs, rebuild local economies, bring back local agriculture, and make societies more resilient to climate change and potential disruptions in global food trade?

In America, where our fifth largest crop by acreage is the lawn, the answer seemed obvious to me: convert America's 40 million acres of lawns into sustainable "yardfarms." In the process, we could reduce demand for industrial agriculture, reduce emissions from lawn mowing, and reduce the three million tons of chemical fertilizers and 30,000 tons of pesticides being pissed away on maintaining green monocropped lawns.

In fact, this has already proved to be a successful model in the past. During World War II, the Victory Garden movement, led by the US government, mobilized Americans to turn their lawns into gardens, and by the war's end 18-20 million Victory Gardens producing 40 percent of household vegetable needs.

Imagine what could be achieved now—with all the media tools at our disposal! Hence, I thought, why not harness the popular reality TV format and do something useful with it: specifically, get America pulling up their lawns and growing their dinners. This would not only get Americans outside and active, eating healthier food, and increase their food security, but when the proverbial shit hits the fan, more Americans will know how to grow their own food and subsist even when they can no longer rely on driving down to their local Walmart to bulk buy their groceries. In other words, this show could help spark a yardfarming revolution that could help futureproof America against the coming disruptions.

Cullen: So your hope is to follow along as a group of Millennials try their hand at yardfarming? Will these be actors? Real people? How will you find them?

Erik: Definitely real people! This is an example of REAL reality TV, not scripted with lots of clips of surprised contestants recycled over and over to add fake drama.

We're actively searching for six individuals who feel excited about spending 2016 living the post-consumer dream, converting acres of lawn in their neighborhood (not just in their backyard but every viable space they can get access to) into new sources of sustainable food, community resilience, and security. Or at least try!

Some surely will fail, thanks to neighbors wedded to the suburban "green grass" ideal, or because of drought, pests, even fed-up parents perhaps!

Right now we're in the search process. We're looking for six young Americans to move back home with their parents or other family, and yardfarm during the 2016 growing season. The call for contestants is open—with the first deadline upcoming on August 1st. You can apply at <http://yardfarmers.us/call-for-contestants/>. Or if you know someone who might be interested, please [spread the word!](#)

Cullen: Why have contestants move back in with their families?

Erik: An excellent question, and admittedly it's one part gimmick—adding extra drama to the show, but it's also three parts futureproofing.

Small families living in giant houses is not sustainable, nor is it resilient. The Great Recession showed how easy it is to lose one's home and how rapidly recessions increase youth unemployment rates.

Having multiple generations living together is a time-tested strategy for secure and resilient living. Parents may hold their formal jobs, youth may be yardfarming the neighborhood and be involved in the budding informal (or what Juliet Schor calls the “plenitude”) economy, elders may be caring for the kids while the kids help take care of their grandparents and the yardfarm and household. That's how we'll make it through future Great Recessions and climate contractions. So celebrating (while also exploring the challenges of) multigenerational living is a big part of *Yardfarmers'* mission.

Cullen: How'd you first come up with this idea?

Erik: Actually, back in 2010 I started to see people becoming obsessed with the game *FarmVille*—not just in the U.S. but even in other countries. This global phenomenon fascinated me, and so I gave it a try—and quickly wrote a screed calling the game company Zynga out, proposing to them if the company really wanted to do something useful, it would not just get people clicking their mouses to ‘play farmer,’ but help teach the next generation to be farmers—an essential development considering that the consumer system is destined to implode in that generation's lifetimes from a rapidly changing climate and the breakdown of other essential ecosystem services. While Zynga never responded, the idea took root over the years and then at the end of 2013 I received a seed grant to develop the concept from the V. Kann Rasmussen Foundation. At that point, I started watching way too much reality TV, talking with a lot of directors, and eventually discovered Katy Chevigny of Big Mouth Productions, who became my co-conspirator in this endeavor.

Cullen: So when you're not promoting yardfarming, are you out farming your yard?

Erik: Not as much as I'd like I admit. I'm a pretty lazy gardener. I grow things that grow themselves. The soil where I live in Washington, DC is more broken brick and glass than organic matter, though each year it's a bit better as we add the compost our household creates. So I don't bother with fickle plants like tomatoes but just harvest greens, sunflowers, perennial herbs, and things that sprout up from our compost. For example, I didn't plant squash this year but have five squash plants growing. Even more than yardfarming, I mostly forage wild edibles: “weeds” like dandelions, chickweed, violets, and lamb's quarters, mulberries (which are abundant in DC), fruit from random fruit trees (several grow on old school properties near me) and acorns—a great source of nutritious flour with the right processing. Though in the last few years, I've focused more on symbolic gardening to get my toddler son excited than trying very hard to produce quantity. Once he's a bit older, I hope that together we'll start yardfarming a much larger area. After all, children should earn their keep too! And there's no downside to learning farm skills early, not when the future is what it is.

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This is something you just have to take a look at!!!!!!

1. [Elora Hardy: Magical houses, made of bamboo ... - TED.com](https://www.ted.com/talks/elora_hardy_magical_houses_made_of_bamboo...)
https://www.ted.com/talks/elora_hardy_magical_houses_made_of_bamboo...

You've never seen buildings like this. The stunning bamboo homes built by Elora Hardy and her team in Bali twist, curve and surprise at every turn. They defy convention because the bamboo itself is so enigmatic. No two poles of bamboo are alike, so every home, bridge and bathroom is exquisitely unique. In this

beautiful, immersive talk, she shares the potential of bamboo, as both a sustainable resource and a spark for the imagination. "We have had to invent our own rules," she says.

Why you should listen

Growing up in Bali with two artist parents, Elora Hardy's creativity led her to design prints for one of New York's biggest fashion houses. Then, in a dramatic shift, she moved back home and founded Ibuku, a team that builds bespoke homes made and furnished almost entirely of bamboo.

The strength of this abundant local grass allows for towering, curvilinear structures with a notable sense of luminosity and comfort. Ibuku builds on a design process and an engineering system that were first established at the nearby Green School. Five years ago, Elora and her team chose one humble material, and with it they are building a whole new world.

What others say

"Her key realization was that with the right nurturing, Asia's creative minds, skilled hands, growing global perspective and unique natural materials will provide the force for positive change in our global future." — INK Talks. From The NEW Internationalist magazine.

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Milking it: Camel farm taps new market with dairy offering

By [Lucy Martin](#)

ABC News - Updated 12 Aug 2014, 7:06pm Tue 12 Aug 2014, 7:06pm



Photo: A camel is fed by Gilad Berman in Kalamunda. (ABC News: [Lucy](#)

[Martin](#))

[Map: Perth 6000](#)

From skim to soy, reduced fat to long life - consumers are faced with a dizzying array of choices when it comes to dairy.

A WA business, Australian Camel Dairies, is hoping to put a new flavour of milk on the map, but it may not be to everyone's taste.

Camel milk is known as "white gold" and at \$20 a litre, it is easy to see why.

The product is wildly popular overseas and could become a profitable new industry for WA.

Just like milking a cow

Australia's first commercial camel dairy operates out of a small shed in the Perth Hills.

Steve Geppert is the resident camel whisperer and his job is to transform these desert ferals into calm milking machines.

The animals are led into pens and tied up, before their udder is washed with soapy water and alcohol wipes to remove any dirt.

Steve then attaches the udder to an automated milking machine with a special attachment designed for camels.

The machine is switched on and the milk begins flowing almost straight away.

Twelve months ago this camel was running around wild out in the Australian desert and now here she is in the dairy, standing so still you could sit down and read a book between her legs.

Steve Geppert

The camel remains calm throughout the process, more interested in the bucket of feed next to it than the machine whirring in the background.

"Twelve months ago this camel was running around wild out in the Australian desert and now here she is in the dairy, standing so still you could sit down and read a book between her legs," Steve said.

Camels are sensitive souls and even the slightest change in routine or stress levels can mean no milk.

But Steve is a good teacher and these girls are old pros.

"The camels we're milking at the moment are well over 400 days into their lactation, but we're still receiving strong yields of five litres per camel per day," he said.

"When we're selling the milk at \$20 a litre, they're certainly paying for their keep."

The raw milk is then passed through a filter to get rid of any dust or fine particles before it goes into the fridge.

An untapped resource

There are an estimated 750,000 wild camels roaming Australia's deserts.

Gilad Berman was working in his native Israel when he heard the Australian government was spending millions of dollars culling them.

"The first question that popped up is why?" he said.

"There is huge demand for camel milk, [so] why do you have to cull camels? Why not bring them in, milk them and build a dairy?"

"A lot of cow dairies are being closed down in the south of WA now.

This could be the next thing - the demand is huge."

Gilad moved his family to Perth and began working for Australian Camel Dairies.

Steve was recruited to train the feral animals, and this past year has been a big learning curve for both of them.

"We're the first commercial dairy in the country so we didn't have a playbook, we basically made it up as we went along," Steve said.

"That was the point of starting with a small pilot program which allowed us to get the kinks out of the system and work out how to smoothly run a commercial dairy."

The dairy has been milking just four camels over the past year, which produce around 450 litres of milk every month.

Every drop is sold, with most shipped to the eastern states and some sent to New Zealand.

The rest is sold to local customers, who cannot get enough of the stuff.



[Photo: Steve Geppert and Gilard Berman say cheers with camel milk.](#)

[Feb 27, 2014. \(ABC News: Lucy Martin\)](#)

Pauline England owns a few of the camels at the dairy and her family goes through four buckets of milk every week.

She says her children are lactose intolerant but can drink camel milk.

"Cows milk made my children phlegmy and they felt sick after drinking it," she said.

"With camel milk they don't seem to have any effect - they can drink as much as they like every day."

Unpasteurised milk can pose health risks

The milk is not pasteurised, which means it is not considered fit for human consumption.

The dairy labels its products with a warning but there is no doubt what customers like Pauline are buying it for.

"There's actually four of us drinking it at home, having it every day on cereal and milkshakes and using it for cooking," she said.

The Health Department warns that raw milk can contain high levels of bacteria that may cause severe illness.

It's a clean environment and I can't see any problem with us drinking milk that hasn't been pasteurised.

Camel owner Pauline England

But Pauline is not fazed.

"I've seen the process of how the camels are actually milked," she said.

"It's a clean environment and I can't see any problem with us drinking milk that hasn't been pasteurised."

Gilad says the dairy has been sending samples of its milk to the Pathwest laboratory to test for bacteria.

"They results we're getting are uncanny," he said.

"We even heard from them that the raw camel milk is much cleaner than pasteurised cows milk, so we're quite happy with what we're selling."

Scarborough mother Mel Borchers discovered camel milk after her son Jaiya was diagnosed with a serious allergy to dairy.

"It has been quite amazing because after two months giving [camel milk] to him, the hives he developed just by touching him with milk [were] the size of a little mosquito bite," she said.

"I started giving him yoghurt and he was fine with it and now he can take butter and cheese too."

She says the milk also soothes Jaiya's skin problems and for that, she is willing to pay a premium.

"I would do anything for it to cure the eczema, to cure the allergy, because I believe that it cured it," she said.

Despite the rave reviews, Australian-based research on the potential benefits of camel milk is almost non-existent.

Plans for expansion

The company has just received approval from the Health Department to pasteurise the camel milk, which means it can be sold for human consumption.

That is expected to open up significant new markets in Australia and overseas.

The United Nations estimates there is more than 200 million potential customers across the globe and the industry could eventually be worth \$10 billion.

"We had people knocking down our door before we even started selling the camels' milk," Steve said.

"Some of our international clients are requesting up to 7,000 litres a month."

We're the only Western country in the world with access to wild camels, we've got the purest and most disease-free wild camels on the planet and we've got some of the highest dairy standards in the world.

Steve Geppert

Their only real competition is the world's first camel dairy in Dubai, which recently began exporting to Europe and is now pushing for access to the US.

Steve is confident Australia has an edge.

"We're the only Western country in the world with access to wild camels, we've got the purest and most disease-free wild camels on the planet and we've got some of the highest dairy standards in the world," he said.

The company wants to expand its herd to around 300 camels, but it will need to build a new dairy and acquire more land first.

Michael Laurence from Murdoch University's College of Veterinary Medicine says milking that many camels will present challenges.

"Firstly you need a source of good and productive camels and not every camel is going to produce a lot of milk," he said.

"Then of course you need the infrastructure and you need the land to house these large animals.

"But once that's established there's no reason why a well-functioning camel dairy can't be quite a productive enterprise.

"Everything points to camel milk being a really good product.

"It's relatively low in fat, high in protein, it's rich and full of flavour and it's consumed widely across the Middle East and other parts of the world.

It is expected the price will eventually drop to around \$10 per litre - still expensive compared to cow's milk, but there is no doubt the demand is there.

But what does camel milk taste like?

Pauline says it is like milk without the creaminess, while Steve says it is a very subtle taste.

"If you're having it in your coffee you certainly wouldn't be able to tell the difference," he said.



[Photo: Steve Geppert milking a camel \(ABC News: Lucy Martin\)](#)

Topics: [dairy-production](#), [sustainable-and-alternative-farming](#), [perth-6000](#)

First posted 28 Feb 2014, 6:59pmFri 28 Feb 2014, 6:59pm

Permaculture's Next Big Step: An Emerging Earth-Wide Network

From PC Britain

Permaculture now encompasses so much more than the ecological and farming foundations it came from.

It is evolving! As a design system for sustainable living, permaculture has the scope to address so many topics at so many scales. At the International Permaculture Convergence in Cuba, 2013, it was agreed to form an international permaculture network.

This is Permaculture's Next Big Step. Now we are starting a global consultation to develop a permaculture strategy for the future. We're looking for key people to help lead this consultative process and we'd like you to join us.

We are creating a framework where:

- key permaculture organisations and networks from every country are involved in shaping the future,
- all 'permies' (anyone doing permaculture) are given opportunity to feed into the process.
- This group does not have the remit to make decisions, nor to create a strategy on others' behalf.

It's an earth-wide network; everyone should feel an ownership of it. You will be invited to take part in a survey in mid-2015.

The aim is that by the next [IPC in September 2015](#) [in London, UK], we will have identified, from this consultation and discussion, the key functions that an international permaculture network will perform and have embedded these within a strategy for making them happen effectively.

Agreement on the functions and strategy will happen at the next IPC. Ideally, from this process we will also have key teams in place to take forward each of these functions in the following months and years (that's stage 2).

Posted by [Jo Sharp](#) / June 8, 2015

PERMACULTURE WORLD EVENTS

International Permaculture Convergence, London 2015

Conference – 8-9 September 2015 – The Light, London

Designing the World We Want - two days packed with presentations, workshops, academic papers, exhibitions, music, and art.

Convergence – 10-16 September 2015 – Gilwell Park, London

Designing the network we want - for people from around the world using permaculture in their everyday lives and communities.

IPCUK will bring together leading experts and practitioners from around the world.

We have everything we need to create a sustainable world and future. Together we will create a vision of a near future society that is caring, sustainable and fair, and explore how we can collectively design strategies and pathways to make it happen.

[Edge events](#), throughout the UK and Europe.
From tours and courses, to talks and more.

What is an Edge Event?

Around the edge of the core IPCUK conference (8 - 9 September, 2015) and convergence (10 - 16 September) will be courses, workshops, lectures, visits and tours, volunteering (like WWOOFing), Permablitzs and lots more.

We will have some of the world's most experienced permaculture practitioners and inspirational designers and project leaders.

“Thanks so much...for supporting the Edge Events. It helps some of us travelling from afar to make the most of our trip and airfare and possibly cover some of our cost to come to IPC and most importantly, share some of our gifts to an audience on the other side of the globe. - [Robin Clayfield](#), facilitator, trainer, author, and musician, Australia.”

The Edge Events working group have some specific ideas, but welcome expressions of interest to have other events. We are particularly keen to have some design courses before IPCUK and tours after IPCUK. Possible Edge Events include:

- International Permaculture Design Courses, with teachers from Britain and internationally. There are many courses happening over the summer in the UK and Europe, and we are happy to include these as IPCUK Edge Events. There should be a genuine connection – trainers attending IPCUK and ideally a mix of international and home tutors.
- Teacher training/ teacher sharing, again with UK and international trainers.
- Tours after the IPC. Would need to start the day after the IPC and last between 2-3 days.
- Longer tours
- Volunteer placements and stays at permaculture projects
- Permablitzs and other place-based community activity
- Lectures
- Courses, workshops and master-classes ranging from ½ day to a week.
- Art / fashion shows
- Music / comedy / entertainment

[Go to the web site for more info - https://www.ipcuk.events/](https://www.ipcuk.events/)

THE BENEFITS OF BEING A FINANCIAL MEMBER OF PERMACULTURE CAIRNS

Eleven Monthly meetings, with information, movies/videos and presentations from informative and interesting members and guest speakers. Plant of the month, Tool of the Month, Tip of the Month, Book of the Month, Cuppa and nibbles and networking time

Discount on most Workshop Fees organised by Permaculture Cairns

Learn more skill by attending Workshops, Permibeas, information nights and events

Learn more about Permaculture Practices and Principles by attending Meetings, Workshops, Permibeas.

Access to tropical vegetable plants and seeds and other resources.

Monthly Newsletter with local info on workshops and events and Permaculture news from around the world

Networking with people of similar interests from other organisations in the area eg. Seed Saver Groups, BioDynamic Group, Local Exchange Trading System aka LETS, Community Garden Groups, Non Government Organisations like Terrain and Northern Gulf Resource Management Group.

Receive email notices of Events/ Courses by Permaculture Cairns, other relevant businesses/organisations - not all of these notices will be in our newsletters if the news was received after the issue date.

Free access to our Library books on a wide range of Permaculture Subjects

Continue learning about Permaculture through shared knowledge and experience

Learn how to live gently on this earth – Care for the Earth, Care for People and Share you excess plants, seeds, produce and skills.

Meet and make new friends.

HAVE YOU PAID YOUR MEMBERSHIP FEES FOR 2015??????

NEWSLETTER PLANT OF THE MONTH

AIBIKA - Abelmoschus manihot (formerly known as Hibiscus manihot)



Plant: Any time

Harvest: All year

An evergreen perennial shrub that can grow to 3 metres. There are many leaf shapes that vary from either finger-like leaves to large broad leaves. Aibika is a heavy feeder which requires regular applications of an organic fertiliser to ensure constant leaf production. Once established and if you chop and drop, the fertilizer use can be suspended as this shrub seems to get most of its nutrition from the air and soil in the tropics

The bush will need pruning as the branches are soft and with heavy leaf growth they tend to break away from the trunk. Best to prune as they are growing to stop this happening. It is a hardy plant and prefers a sunny aspect with rich, moist, well-drained soil. In Cairns we don't need to protect from frost, but the Tablelands would need to.. Keep mulched for moisture retention and for feeding.

Planted in groups Aibika makes a very attractive hedge in the garden, where it provides a cool microclimate under its large leaves. Consider growing a ground cover of peanuts under (for nitrogen fixing), with a tomato or bean growing up the Aibika's trunk and you have a productive nitrogen-fixing guild with food on the way.

Propagation: Propagation is by cuttings taken at any time of the year in the tropics or by seed saved from the yellow hibiscus-type flower. Grasshoppers are very fond of Aibika, so a good deterrent is to interplant with Perennial Bush Basil.

Nutrition: Aibika is very nutritious, with higher levels of Vitamins A and Minerals than Cabbage, It has 22% protein by dry weight, high levels of beta-carotenes pro-vitamin A, and Minerals: Iron, Manganese, Calcium, Zinc, Potassium, Sulphur, Magnesium.

USES: Aibika leaves and short succulent tips are usually cooked but can be eaten fresh. Test first before eating a big mouthful. The oxalate will tickle your throat if not young enough. Slightly older leaves are best steamed, boiled, fried or baked. Large leaves can be used as wraps for cooking food in such as palusami and dolmades. It is a suitable first food for infants when boiled and mashed with root vegetables.

If cooking Aibika little water should be used, as some minerals, especially potassium, magnesium, zinc, iron and calcium are lost in the water; any water should be consumed as soup. Aibika (and most other cooked leaves) is ideally served with coconut cream, which increases the uptake of betacarotene and conversion to vitamin A.

Traditionally Aibika has medicinal uses such as treating sore throats, stomach aches, diarrhoea, increasing milk production, and preventing bone loss.

Please note Memberships fees are due and payable on 1st January 2015

Memberships form may be completed online on our web site and emailed to us from there. Our Bank account details are on the membership form so you can pay online.

Permaculture Cairns

Membership Form 2015

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 Bank or Online Direct Deposit - Permaculture Cairns Account at Cairns Penny Bank in Grafton Street. BSB 704-966 Account No. 100009440 please include your Surname as reference.

Do you have skills that you would be willing to share that would be of help to Permaculture Cairns? If so please give details below-

.....

Permaculture Cairns Public Meetings - All Welcome Third Tuesday of month Feb to Nov (Second Tuesday Dec). Doors open 6pm, meeting starts at 6.30pm at: Flexible Learning Centre, 90-92 Clarke St. (off Hoare St), Manunda

Enquiries

President: Carol Laing workshops@permaculturecairns.org.au
Secretary: Lois Hayes info@permaculturecairns.org.au
Treasurer: Jenny McGrath treasurer@permaculturecairns.org.au
Website: www.permaculturecairns.org.au