

Permaculture Cairns Inc. 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



Care of the Earth, Care of

People. Share the excess

August Public Info Meeting

Tuesday 19th 6:30pm for 7pm start

**Flexible Learning Centre, 90 Clarke Street, Manunda
Clarke Street comes off Hoare on the Salvos Corner.**

Members please bring a plate of finger food to share, and a friend.

The Terrain Natural Resources Management Planning team will be our guest for the night

Workshop Presenters will be Steve Bailey, Ian Sinclair and Gary Searle.

The Terrain NRM Planning team is going to run a 1hr session to flesh out what you value about what the region provides you and your club.

Not only will this help bring some great discussion and better understanding about the natural environment, but the information collected will directly influence the content of the new regional Natural Resource Management Plan. It will help Terrain build a list of priorities for management actions into the future.

Last months' guest speaker

Sarah Harlan, a proprietor of NQ Solar was a wonderfully knowledgeable guest speaker. Sarah answered all our questions before, during and after the meeting and really enthused some people to take action. Although many of the members present had solar installed we all had questions for Sarah. Thanks Sarah, perhaps you will come back again.

PERMACULTURE PRINCIPLE NO 8

Integrate rather than segregate – “Many hands make light work”

By putting the right things in the right place, relationships develop between them and they support each other. The icon for this principle represents a group of people from a bird's eye view, holding hands in a circle together. The space in the centre could represent “the whole being greater than the sum of the parts”. The proverb “many hands make light work” suggest that when we work together the job becomes easier.

**Permaculture Cairns Building Resilient Communities
Workshop Series**



ALL ABOUT EARTHWORMS

with Carol Laing

23rd September 2014, 9am for a 9.30 start - finish 12.30

Not all Worms are the same.

Earthworms live in the soil but Compost Worms don't live in the soil

How to keep Earthworms in the garden

How to make a simple home for Compost worms

How to keep Compost worms healthy

How to harvest the castings from Compost worms. How to use the worm juice and castings.

Registration is essential - email- workshops@permaculturecairns.org.au

There is a \$10 fee for this SITA workshop which may be paid on the day. Morning tea is provided

Venue:- You will be advised when you register this will depend on numbers so please register.

-o0o-

**Introduction to Tropical Vegetables
& Cooking Tropical Vegetables**

With Carol Laing & ? yet to be confirmed

6th September 2014 - 9am for a 9.30 start - 12.30 fins

Let us answer some of your questions

Why grow tropical vegetables?
Which tropical vegetables are useful in the vegie garden?
How to grow tropical vegetables?
What other uses do these vegetables serve?
Where do I get them?
How do I cook them?

Registration is essential - email- workshops@permaculturecairns.org.au

There is a \$10 fee for this SITA workshop which may be paid on the day. Morning tea is provided

Venue:- Flexible Learning Centre, 90 Clarke Street, Manunda

We thank the SITA Community Grants Program for making these workshops possible.



SITA

**THE LEADER
IN RESOURCE
RECOVERY**



**SITA
COMMUNITY
GRANTS**

CRAFT PERMI MORNING



Start felting young @ three and half years



Jenny and the owl faces



Lois and the plastic flowers



Samantha and the mosaics

MORE WORKSHOPS

The Permaculture Cairns Introduction to Permaculture Workshop has been postponed until the new year. More information will be available before the end of this year.

FNQ Biodynamic Workshops

Biodynamic Basics - 17th August 2014 10-4.30pm

Southern Tablelands—Ravenshoe

This is for beginners and repeats—where we learn the basic Biodynamic methods, stirring the preparations and putting out, making BD Compost, Cow pat Pit,

Seaweed and weed teas, and why we do it!

A fun day with lots of hands on activity as we build compost together etc.

Venue: Max Brandenberger, 284 Woorwoora Rd, Ravenshoe. (off Tully Falls Rd.)

\$30 members \$40 non members Repeats free.

Wear old clothes, closed in shoes and bring gloves.

Bring chairs and lunch/morning tea to and lunch/morning tea to share Refreshments provided.

Biodynamic Basics Weekend Workshop – 23-24 August 2014

Helenvale 30km sth Cooktown

With Adam Collins

Learn the basic Biodynamic methods, stirring the preparations and putting out, making BD Compost, Cowpat Pit, Seaweed and weed teas, and why we do it!

Biodynamic calendar for planting and sky watch on Saturday evening.

Bring food from your garden to share– we'll make a

feast. Refreshments provided. Bring chairs.

Free camping available.

Cost: \$60 members BDFNQ \$80 couple

Non members: \$80 single \$120 couple Incl. Membership to BDFNQ.

Bookings: Waratah Nicholls 0429 695533

Email preferred: waratahnicolls@gmail.com

Bamboo Workshop When: Saturday 6th and Sunday 7th September

The Craft

2 day workshop covers the basic skills required to make bamboo joints, to split and weave bamboo.

Both high and low technology tools and techniques will be used.

Day 1 Gain the essential skills to work bamboo

Day 2. Partake in creating a range of bamboo projects

Where: Bamboo Solutions, 1 Ascham Street, Ravenshoe

Cost: \$200

Bring: Hat, good footwear, gloves, notepad, lunch to share and a smile.

Bookings: Phone 40977645, Mob 0409448720

Email: j.hartmann@ozemail.com.au

www.bamboosolutionsfnq.com

Getting to the Heart of Permaculture Design

Dr. Wendy Seabrook and Hill Top Farm – working with nature

Oct 17 - 21, Hill Top Farm, Cooktown

Hill Top Farm is an innovative Permaculture property outside Cooktown in tropical Queensland. We run small residential courses catering for all levels of experience. Our focus is helping create self-maintaining and regenerative communities by working with nature.

A short Permaculture course providing a comprehensive tool kit of *practical* Permaculture principles you can use to design sustainable gardens, farms, communities and businesses.

For more information check out -

<http://hilltopfarm.wix.com/beyondsustainability#!permaculture-courses/ca3a>

Cairns Seed Savers Meeting – Sunday 24th August 2014

at the Bungalow Community Garden
Cnr Aumuller and Little Spence Streets Bungalow

WHAT IS PLANNED: We will have the terrific cob oven fired up at the Garden, and provide the ingredients for the pizza bases only (flour etc., sauce and cheese). Gluten free will be available. Everyone can participate in making pizza bases, and then 'decorate' them with the toppings that everyone should bring with them to use and share. **RSVP by Wednesday 20th August email: cairnsseedsavers@hotmail.com**

WHAT TO BRING:

- * Organically grown, non-hybrid seeds if you have any spare
- * Topping ingredients for pizza (maybe fresh from your garden)
- * Your own chair, plate and cutlery (must bring as none available at venue)
- * Your spare seedlings, cuttings, plants and produce for the Share Table

AGENDA: 10-10:15AM Meet'n'greet, and general housekeeping

10:15 – 10:30 Concept of Seed Savers

10:30 – 11:30 Seed sorting and pizza base preparation

11:30 – 12:30 Talk about and tour of Bungalow Community Garden

12:30 – 2PM Enjoy a shared lunch of pizza baked freshly on site in the cob oven

Gold Coin Donation for the pizza bases - See you there!

OUR HERB SPIRAL WORKSHOP – LOOK WHAT WE DID in 3 hours



With a grant from the SITA Community Program, Bruce and Jenny and 16 energetic workers transformed a 2 metre diameter space into a remarkable Herb Spiral complete with herbs and flowers to attract bees. We built this using a 15m role of 2ml x 75 x 50mm Wire Mesh, 1/2 sq. metre. of rock, a 1/4 sq. metre of recycled rubble (thanks Michelle), ¼ sq metre of top soil and some second hand shade cloth.

When finished we planted it out with lots and lots of herbs for all the Bungalow Community Garden members to enjoy. And we had fun doing it, don't you wish you had been there.

Big thank you to SITA, the Bungalow Community Garden, Len, Wendy, Jenny and Bruce and all the energetic workers for a great workshop.

A special thanks to Kennards, Jude and her partner for the supply of the toilet for the day.

And a big thank you to Bruce for acquiring the majority of the materials and for all the running about required to collect them.

News Items

The Hon. Greg Hunt MP

Minister for the Environment

MEDIA RELEASE

28 July 2014

Strictest conditions on Carmichael Coal Mine project

After undertaking a thorough assessment and consideration under national environment law, I have approved the Carmichael Coal Mine and Rail Infrastructure project, subject to 36 strict conditions.

The absolute strictest of conditions have been imposed to ensure the protection of the environment, with a specific focus on the protection of groundwater.

These 36 conditions complement the conditions imposed by the Queensland Government, and will ensure the proponent meets the highest environmental standards and that all impacts, including cumulative impacts, are avoided, mitigated or offset.

A rigorous, open and thorough environmental assessment process was undertaken to take account of the public interest in the project.

I have also visited the proposed site to better understand the project and met with the local community to understand their views.

The project, which was proposed and advanced under the previous state and federal ALP Governments, will have a resource value of \$5 billion per annum over 60 years.

At full export capacity, the project is expected to contribute almost \$930 million to the Mackay region's gross regional product and \$2.97 billion to the Queensland economy each year for the next 60 years.

It will generate an estimated 2475 construction jobs and a further 3920 jobs during the operations phase.

The project has a lifetime resource value of at least \$300 billion, and will enhance economic development opportunities throughout the region through indirect employment and training, and contract and supply opportunities.

It is estimated the project will provide electricity for up to 100 million people in India.

The strict conditions will ensure the protection of the environment as a paramount concern.

The comprehensive assessment of this project took into account advice from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC).

I personally visited the site with the head of the IESC, and have incorporated all of her suggestions in the conditions.

Any matters raised by the Independent Expert Scientific Committee were met with further and strengthened conditions, including requirements for a review of the groundwater flow model and measures to protect the Great Artesian Basin.

The strict conditions being imposed require the proponent to:

- ensure that a minimum of 730 megalitres of water are returned to the Great Artesian Basin every year for five years. This is an effective extension of the GABSI programme.
- peer review the parameters of the groundwater modelling and to re-run the model to determine whether further mitigation measures are required
- monitor groundwater changes to verify and update the modelling
- adaptively manage uncleared habitat to address potential subsidence impacts and groundwater changes
- offset impacts from cleared habitat and review offset requirements if uncleared habitat is subsequently impacted through subsidence or groundwater changes
- contribute funding to address cumulative impacts to threatened species and communities
- undertake research on potential groundwater changes to adaptively manage risks of impacts

I acknowledge the work of the previous State and Federal ALP Governments in advancing consideration of this project. I am pleased that we have been able to apply some of the strictest environment conditions in Australian history as part of this decision.

For further information see http://www.environment.gov.au/cgi-bin/epbc/epbc_ap.pl?name=current_referral_detail&proposal_id=5736

Media contact: John O'Doherty 0402 047 852

From the Alternative Technology Association 24/7/14

With the carbon price repealed, Australia now has no legislated policy to ensure emissions go down. Emissions-intensive activities are now comparatively cheaper once again.

The Federal Government has an alternative called 'Direct Action'. It's a policy in which taxpayer dollars are used to purchase emissions reduction activities from large industry. It involves a 'reverse auction' in which the Government calls for tenders from interested providers and, rather than paying the highest price for emissions reduction activities, it pays the lowest.

There are several problems with the Government's Direct Action policy:

- There is no cap or limit on emissions;
- It relies on the limited resources of the federal budget;
- The policy relies on public servants in Canberra deciding where and how best to invest millions of dollars to achieve necessary reductions.

The absence of a strong national carbon policy means individuals and communities must drive the change towards sustainability even more - improving the way we live and work and influencing our leaders in a better direction. ATA members will continue to lead the charge in this respect.

Happily, there is good news for sustainability in the long-term.

Australia's energy market has changed with electricity demand starting to be uncoupled from economic growth, while the rapid rise of rooftop solar and energy efficiency has proved to be a disruptive force for the good. Globally, the US and China have made positive moves which will hopefully transform leadership on sustainability in the near future.

Despite an ongoing review, there is widespread support for a strong [Renewable Energy Target](#) to maintain support for renewable energy in Australia. And there is momentum across the country for [community renewable energy](#), with many community wind and solar projects planned.

The next few years will be a critical time for climate policy in Australia and around the world. The Government needs to be held to account on Direct Action and opportunities to re-introduce a strong Emissions Trading Scheme must be grabbed with both hands. The ATA will continue to push for these and we look forward to working with you and all of our wonderful members to create a better future for our children, grandchildren and the generations to come.

Damien Moyse,

ATA policy and research manager.

damien@ata.org.au

BIODIVERSITY INFORMATION CAPTURED IN NEW CSIRO BOOK – From CSIRO

This morning at Parliament House, Federal Environment Minister Greg Hunt will launch *Biodiversity: Science and Solutions for Australia*, a new book from CSIRO.

Capturing the latest information on Australia's biodiversity, the book aims to provide business, government, and the community with practical solutions to managing Australia's globally unique natural assets.

"This publication is an invaluable resource for anyone managing Australia's ecosystems. The book provides an important bridge from our scientists to the wider Australian community," Minister Hunt said.

Whether it's a precious cultural symbol, our life-support system, or a resource to be used - biodiversity matters to all Australians. Yet, despite our sense of its importance as part of our national identity, in many parts of our country biodiversity is in trouble.

"CSIRO's book draws together the latest science to identify practical solutions to the many challenges that face Australia's unique biodiversity, which include habitat fragmentation, altered fire regimes, invasive species, harvesting of species, and species decline," CSIRO Chief Executive Dr Megan Clark said.

"The book draws on CSIRO's 90 years of research into biodiversity, as well as insights from the broader community, including research organisations, industry, all levels of government and the wider community."

The book's 192 pages provide scientific insights including:

- the ancient origins and unique features of Australia's species, as well as the current status of our biodiversity on land and in rivers, lakes and the sea.
- tools for management and planning, including Australia's protected area system
- Indigenous perspectives on biodiversity
- how Australia's biodiversity interacts with agriculture, the resources sector, and cities.

The book is available for free as an eBook from the CSIRO website and will be distributed to key decision makers around the country.

The printed version of the book has been produced on paper certified by the Forest Stewardship Council.

Biodiversity: Science and Solutions for Australia can be downloaded for free at:
www.csiro.au/biodiversitybook

Author interviews for each of the twelve chapters are available on <http://tv.csiro.au/>

Breaking news:

New study by EWG and Duke finds toxic fire retardants in mothers – and even more in toddlers - 8/8/2014

This is a study done in the USA, but these chemicals are most likely used in furniture here in Australia, so be aware.

In the first study to investigate children's exposure to six fire retardant chemicals, scientists from EWG and Duke University have found evidence of exposure to a cancer-causing fire retardant, TDCIPP, in the bodies of all 22 mothers and 26 children tested.

The children had an average of nearly five times as much as the mothers of a chemical formed when TDCIPP breaks down in the body. In the most extreme case, a child had *23 times* the level measured in the mother.

Because fire retardants are in many consumer products such as furniture cushions and are nearly impossible to avoid completely, we put together this list of tips to help you and your family limit your exposure:

- **Do your homework before buying baby products.** Many kinds of baby products have been exempted from regulations that prompted companies to add fire retardants. But some manufacturers still use these chemicals. Find out before you buy and choose products that don't contain any fire retardants.
- **When buying a new couch, choose one made without fire retardants.** New regulations make it much easier for furniture manufacturers to sell products that have not been saturated with chemical fire retardants. There is no easy way to tell which is which. Contact the manufacturer to ask if these chemicals are in its furniture.

- **Want to reupholster your couch? Replace the foam too.** If you are planning to reupholster your couch, consider replacing the foam at the same time. The old foam likely contains fire retardants. Ask your upholstery shop to find retardant-free polyurethane foam.
- **Inspect foam cushioning for damage.** Make sure cushion covers are intact, since exposed foam can cause fire retardant chemicals to leach out more quickly. Items like car seats and mattress pads should always be completely encased in protective fabric.
- **Use a vacuum fitted with a HEPA filter.** These vacuums are more efficient at trapping small particles and will likely remove more contaminants and allergens from your home. High efficiency "HEPA-filter" air cleaners may reduce particle-bound contaminants in your house.
- **Be careful when removing old carpeting.** The padding is typically made of scrap foam that contains fire retardants. Old carpet padding can become somewhat pulverized by the time it is exposed for replacement. Isolate the work area from the rest of your home.

New app helps Australians save money on power bills

11 July 2014

Joint media release with the Minister for Communications, the Hon Malcolm Turnbull MP

The Australian Government has released a free Energy Rating app designed to help households and businesses save money on their power bills by choosing energy efficient appliances.

Minister for Industry Ian Macfarlane MP said the smartphone app is the first of its kind to display power use over the life of an appliance in dollars, rather than kilowatt hours.

"This app shows people what the energy rating means financially, and by adding the estimated total power cost to the purchase price, people can see what they are saving," Mr Macfarlane said.

"Australian households and businesses can now more easily choose energy efficient appliances that save money on their power bills."

The app uses the data from the trusted and widely recognised Energy Rating Label, a joint industry and Government programme that has helped people buy energy efficient appliances for over a quarter of a century.

Minister for Communications Malcolm Turnbull MP said the Energy Rating App is one of many initiatives being driven by the Australian Government's commitment to open data, which delivers wide ranging economic and social benefits to the entire community.

"We are encouraging Government departments to release their high value datasets to app developers and the broader community through data.gov.au, the Australian Government's one stop shop for open data," Mr Turnbull said.

"Since the Government came to power the number of datasets being uploaded onto data.gov.au has increased more than seven-fold."

Many new government datasets have been released in readiness for GovHack 2014 (July 11-13), where more than 1,000 budding developers will compete for prizes worth over \$70,000 for creating innovative prototype apps.

To download the free Apple, Android and BlackBerry versions of the Energy Rating App or use the web version for other smartphones, visit www.energyrating.gov.au/.

Alternatively you can find the app under the name Energy Rating App in the Apple App Store, BlackBerry World and in Google Play.

For more information about Data.gov.au and GovHack 2014 visit www.data.gov.au/ and www.govhack.org/

Media contacts:

Mr Macfarlane's office 02 6277 7070

Mr Turnbull's office 02 6277 7480

THE CONVERSATION

By James Whitmore

Dredge spoil linked to coral disease, WA study shows

Dredging has a direct impact on coral health, according to a [study](#) published today in PLoS ONE that shows for the first time the link between dredge spoil and coral disease in the wild.

The research, led by Joseph Pollock at James Cook University, found that corals exposed to dredge spoil suffered twice the frequency of disease. While the study took place in Western Australia, experts said the findings have implications for dredging on the Great Barrier Reef.

Across the globe coral cover has been decreasing — by up to 80% in some oceans. Disease is increasingly thought to be factor; some reefs in the Caribbean have lost 95% of their coral cover to disease. Many factors are known to be involved, including high water temperatures, predators (such as crown-of-thorns starfish), and water quality.

In December 2011 Pollock and colleagues surveyed corals near Barrow Island, Western Australia, affected by 7 million cubic metres of dredge spoil for the [Gorgon natural gas project](#). Using satellites to measure the dredge plume over time, they counted the number of corals affected by disease and the time they were exposed to the plume.

Corals affected by the plume for the greatest length of time showed a two-fold increase in disease frequency relative to corals unaffected by the dredge spoil.

Pollock and Professor Bette Willis, a co-author on the study, said dredge spoil affects corals in two ways. The sediment reduces light received by corals, which they depend on for feeding; and when sediment settles the corals have to spend more energy cleaning themselves. Both impacts cause stress, and that stress manifests as disease and ill-health.

The study also looked at other factors that might be causing coral disease, including warmer temperatures and predation, but found that there were no changes in either at the study site that could be causing disease, pointing the finger at dredging.

Lack of monitoring threatening reefs

Professor Terry Hughes, co-director of the Australian Research Council Centre of Excellence for Coral Reef studies, said the new research shows a “definitive impact” of dredging on corals, and is comparable to dredging activities on the Australian east coast.

An estimated [140 million cubic metres](#) of dredging is under consideration for the Great Barrier Reef over the next decade. The Abbot Point dredging project, approved by the federal government in 2013, will dump 3 million cubic metres.

While there is currently no link between ports, development and coral loss on the Great Barrier Reef, dredging has [damaged other habitats and species](#) in the region. According to the Great Barrier Marine Park Authority [regulations](#) will prevent the Abbot Point dredge spoil being dumped on corals, seagrass and other sensitive reef habitats.

But Professor Hughes, who was not involved with the current study, said reefs near dredging at Townsville have died off over the past 25 years, although there hasn't been proper monitoring to link the two.

He said monitoring of dredging on the east coast is not as rigorous as monitoring in Western Australia where the study took place.

“The problem with the monitoring as it exists now is that it tends to be very short term, focusing on the dredging period. Nobody is looking at where that sediment has gone after five or ten years.”

Professor Hughes said other studies have shown that sediment from ports can spread further, last longer and can be more toxic than port authorities think.

A [study](#) by Kathryn Burns from James Cook University, published this year, showed that chemicals from coal dust — from trains, ports and loading facilities — currently exist at toxic levels within the Great Barrier Reef. It also found that the chemicals have spread beyond the reef boundary.

“It’s quite damning,” said Professor Hughes, “Under the nose of monitoring, there’s already been a huge spread of silt from coal port activities... It really undermines the claim that dredge spoil is only impacting the dredge site.”

“Clearly what these studies are saying is that dredging is not just benign sand, it’s having an impact, and a much broader impact that what port authorities would have us believe.”

There are more articles on this subject by the same author on The Conversation web site

21 July 2014, 2.13pm AEST Another article from The Conversation

[Renewable energy is ready to supply all of Australia’s electricity](#)

In a [recent article](#) on The Conversation, University of Melbourne Professor Emeritus Frank Larkins wrote that Australia’s targets to increase renewable energy will make electricity more expensive, thanks to problems with consistency and storage.

But Professor Larkins is several years behind developments in renewable energy and its integration into electricity grids. In fact, we already have technically feasible scenarios to run the Australian electricity industry on 100% renewable energy — without significantly affecting supply.

When the sun doesn’t shine...

Professor Larkins states that hydro, wind, solar depend on:

irregular weather patterns, which lead to uncertain and intermittent power output. This is a big challenge for electricity generators and retailers, and it can cost lots of money.

But the problem of “consistency” or variability of some renewable energy sources is now better understood, both from empirical experience with lots of wind power in electricity grids, and from hourly computer simulations of electricity supply and demand performed for many states, countries and global regions.

For instance, South Australia nominally has two coal-fired power stations, several gas-fired ones, and at least 15 operating wind farms. Wind now supplies an annual average of 27% of South Australia’s electricity generation. As a result, one of the coal stations is now shut down for half the year and the other for the whole year. And the state’s electricity supply system is operating reliably without the need for any additional non-renewable energy supply.

In Germany, the northern states of [Schleswig-Holstein](#) and [Mecklenburg-Vorpommern](#) have about 100% and 120%, respectively, of their electricity generated from the wind. Of course they use their transmission links with neighbouring states (including each other) to assist in balancing supply and demand with such high wind penetrations.

100% renewable — without supply problems

But Australia’s [National Electricity Market](#) (NEM) has no such links to other electricity supplies. How could it increase generation from renewable energy without hurting electricity supply?

Ben Elliston, Iain MacGill and I at UNSW have performed thousands of computer simulations of the hour-by-hour operation of the NEM with different mixes of 100% commercially available renewable energy technologies scaled up to meet demand reliably.

We use actual hourly electricity demand and actual hourly solar and wind power data for 2010 and balance supply and demand for almost every hour, while maintaining the required reliability of supply. The [relevant papers](#), published in peer-reviewed international journals, can be downloaded from [my UNSW website](#).

Using conservative projections to 2030 for the costs of renewable energy by the federal government's [Bureau of Resources and Energy Economics](#) (BREE), we found an [optimal mix](#) of renewable electricity sources. The mix looks like this:

- Wind 46%;
- [Concentrated solar thermal](#) (electricity generated by the heat of the sun) with thermal storage 22%;
- [Photovoltaic solar](#) 20% (electricity generated directly from sunlight);
- Biofuelled gas turbines 6%; and
- Existing hydro 6%.

So two-thirds of annual energy can be supplied by wind and solar photovoltaic — energy sources that vary depending on the weather — while maintaining reliability of the generating system at the required level. How is this possible?

It turns out that wind and solar photovoltaic are only unable to meet electricity demand a few times a year. These periods occur during peak demand on winter evenings following overcast days that also happen to have low wind speeds across the region.

Since the gaps are few in number and none exceeds two hours in duration, there only needs to be a small amount of generation from the so-called flexible renewables (those that don't depend on the vagaries of weather): hydro and biofuelled gas turbines. Concentrated solar thermal is also flexible while it has energy in its thermal storage.

The gas turbines have low capital cost and, when operated infrequently and briefly, low fuel costs, so they play the role of reliability insurance with a low premium.

No need for batteries

Our research, together with similar extensive hourly computer simulations by others spanning up to a decade from Europe and the USA (reviewed in Chapter 3 of "[Sustainable Energy Solutions for Climate Change](#)"), refute Professor Larkins' statement that "We need baseload electric power [from non-renewable sources] to guarantee security of supply".

Many regions of the world could operate a 100% renewable electricity system reliably without any baseload power stations. Indeed, in electricity supply systems with a lot of renewable energy, inflexible coal and nuclear baseload power stations get in the way. What we really need to balance the variability of wind and photovoltaic solar are the flexible renewable energy power stations: hydro, solar thermal and biofuelled gas turbines.

This mix needs only a little storage from hydro and solar thermal to maintain reliable supply. With enough fuel, biofuelled gas turbines could also be considered storage. Such a mix has no need for expensive batteries or hydrogen fuel cells.

Using BREE's conservative projections for the costs of renewable energy technologies in 2030, we find that the cost of 100% renewable energy is A\$7-10 billion per year more than that of the existing polluting fossil fuelled system. Although this is a 50% increase, it is likely to be less than the damage caused by the increased frequency of heatwaves, droughts and floods in a business-as-usual scenario.

The renewable scenarios would be economically competitive with the fossil system either with a carbon price of A\$50 per tonne of CO₂ (reflecting part of the environmental and health damage from fossil fuels) or, in the absence of a carbon price, by removing the existing subsidies to the production and use of fossil fuels and transferring them temporarily to renewable energy.

As an alternative to BREE's cost estimates, [Bloomberg New Energy Finance](#) calculates that wind and solar are already cheaper than new build coal and gas in Australia. If this is correct, 100% renewable systems are already economically competitive with a new fossil-fuelled system.

Australia could be more ambitious

Is Australia's [Renewable Energy Target](#) of 41,000 gigawatt hours per year in 2020 "ambitious"? Not on a world scale. The table below compares several countries' renewable energy contributions, as well as their official long-term targets.

Renewable energy use in different countries

Data: Author

Country	Renewable electricity contribution in 2012 or 2013	Targets for renewable electricity
Denmark	30% from wind + some bioenergy from agricultural residues	50% from wind by 2020; 100% from renewable energy by 2035
Germany	About 21%	80% by 2050
Scotland	35% (mostly hydro)	100% net by 2020
Australia	13% in 2012-13	41,000 GWh/year (about 25%) by 2020

Considering that Australia has much greater solar energy and wind potential than the European countries, its present renewable contribution and its 2020 target are both modest.

Moving to 100% renewable electricity is safe, technically feasible and affordable. It can cut greenhouse gas and other emissions and land degradation, while creating local jobs and energy security. It is ready to go!

SNIPPETS of news to follow up:

From University of California

By Sean Nealon on July 8th 2014

- *Using Sand to Improve Battery Performance*
- **Researchers develop low cost, environmentally friendly way to produce sand-based lithium ion batteries that outperform standard by three times**
- RIVERSIDE, Calif. (www.ucr.edu) — Researchers at the University of California, Riverside's [Bourns College of Engineering](#) have created a lithium ion battery that outperforms the current industry standard by three times. The key material: sand. Yes, sand.
-

The findings were just published in a paper, "[Scalable Synthesis of Nano-Silicon from Beach Sand for Long Cycle Life Li-ion Batteries](#)," in the journal Nature Scientific Reports. Check the web site for more info.

From ABC Rural radio – Potatoes have more vitamin C than and orange and more potassium than a banana???

Australians have turned their back on potatoes in favour of 'trendier' carbohydrates, according to an industry body.

Potatoes South Australia chief executive Robbie Davis says potatoes are widely considered fattening, high in bad carbohydrates, inconvenient and boring.

Due to a lack of national marketing, Ms Davis says rice and pasta have become the more popular choice amongst consumers. The negative views are false, she says, and positive messages need to be spread. "They are fabulously healthy for you. "They have more Vitamin C than an orange and more potassium than a banana."

More snippets of info

Caution urged on use of popular pesticides. Scientists in the United Kingdom are warning that a key ingredient in the world's most commonly used pesticides could have lethal side effects for the environment.

They've been reviewing 800 scientific papers on neonicotinoids, which are usually applied as a seed dressing when planting crops like wheat, canola, cotton, pulses and sunflowers in Australia, Europe and North America.

Professor of biology, Dave Goulson from the University of Sussex was part of the review team. He says the key traits of neonicotinoids which make them so effective could prove to be a double-edged sword.

'One is their persistence, they hang around for years in the soil and can accumulate over time,' Professor Goulson said. 'They're water soluble so they can leach into rivers and streams next to fields, and they're systemic, they're meant to be sucked into the crop as it germinates and permeate all of it so it's protected but that gets into pollen and nectar in flowering crops like rapeseed.'

He said the chemicals take about six years to break down to 50 per cent of their strength.

Last year the European Union voted to restrict the use of neonicotinoids on flowering crops for two years, fearing they could be damaging honey bee and wild bee colonies.

Professor Goulson says it's too simplistic to blame colony collapses on neonicotinoids alone, but they can weaken the bees' immune system and make them more susceptible to disease.

He says the solution is to try to reduce stressors on the bees, and he personally believes farmers and regulators should be more judicious in their use of neonicotinoids.

'They do do the job but if you're not careful they have side effects, and I would hope that farming communities pay more attention to that.'

Nutrition Matters - Non-hybridised Vegetables & Seed Saving for Your Food

Article by Graeme Sait from Nutri-Tech Solutions 7/8/2014

I often describe the home vegetable garden as the ultimate wellness tool because it can provide fresh, chemical-free, nutrient-dense food that is often not readily available elsewhere. It is a primary tool that allows the reclaiming of responsibility for our own health because we now control a major source of our food.

Minerals, microbes and humus are the drivers of healthy vegetable production, but there is another factor that can increase the medicinal value of our food. This factor is often overlooked in the nutrition equation, but it can make a real difference. The vast majority of commercial vegetable seedlings and seeds are now hybridised and, while this might increase profit for seed merchants, it is not necessarily a benefit for consumers.

The Problem with Hybridisation

Hybridisation essentially involves a situation where a plant breeder decides he can do it better than nature, so he creates a new plant with more "desirable" features. The problem here is that we cannot increase the number of genes in the gene pool. When we hybridise, we are

essentially shuffling around this limited gene pool. We are moving genes from one area of activity to another and very often that means that the original role of the genes can be corrupted. This "corruption" often seems to impact the capacity of the crop plant to uptake nutrients. We work with strawberry breeders in Holland, for example, where the three most popular hybrids all suffer an incapacity to uptake manganese. However, this fatal flaw in the plant breeding bonanza usually impacts more than one nutrient.

A prime example of this phenomenon involves a "weed" called purslane. This is actually a tasty delicacy that was apparently the favourite food of Ghandi and is a sought-after food in the Middle East. It is tremendously alkalising, to the point that purslane tea was the major strategy King Henry VIII used to counter his recurring gout. It is a tremendous source of omega-3 fatty acids, GLA and vitamin A and enterprising growers are now offering purslane by the kilo at farmers' markets around the world.

When it was decided to hybridise purslane to achieve a colorful flowering plant called portulaca, there was a price to be paid. Portulaca has no nutrient value at all.

The green revolution involved the hybridisation of our main food – cereal grains. There were increasing problems with lodging, which rendered affected plants unharvestable. Instead of addressing the root cause of poor stem strength, which is a deficiency of copper, potassium or silica, we opted to 'improve' upon nature by producing a more squat plant that did not lodge so readily.

Most of us are not aware that this solution brought more problems than it solved. The green revolution cereals uptake far less nutrition than their predecessors and several of them are unable to uptake cobalt at all (hence a widespread problem with B12 deficiency, as this nutrient is created from cobalt).

Save Your Seed

Growing heirloom vegetables will improve your nutrition and it also gives you a chance to improve your crops season by season. Practicing the age-old strategy of saving seed from your very best vegetables each season ensures that you are improving the gene pool that feeds your family.

My grandfather grew extraordinary vegetables and his porch cupboard was filled with labelled plastic containers containing the dried seeds from his prize pumpkin, cucumber, tomato and capsicum. It is amazing how prolific and abundant nature can be. A pumpkin, for example, has enough seed to grow enough pumpkins to feed a small town. Your involvement in fast tracking natural selection by saving the best of the best each season can only lead to an improvement in your food and it is also great fun.

Look what big business is up to in USA

A new EWG report found that Big Food groups opposed to labelling foods that contain genetically engineered ingredients disclosed \$9 MILLION in lobbying expenditures that made reference to GE labelling in the first quarter of 2014 – nearly as much as they spent in all of 2013!

95 percent of Americans support GE labelling, and states across the country are moving to pass laws that require it. Groups like the Grocery Manufacturers Association are putting profits before your fundamental right to know.

Big Food is willing to spend millions to stop EWG and the GE labelling movement. We need to show them the power of EWG's grassroots community – *your* power. We absolutely must raise \$35,000 by midnight TONIGHT to make our monthly budget. From the Environmental Working group in the USA – 1/8/2014

Ongoing Date Claimers

Tablelands LETS AUGUST Calendar

RAVENSHOE - Saturday 16th Trade afternoon 12 till 2pm - following Community Gardens gathering - come and check it out. Bring something to trade, a table or blanket to display your wares and lunch to share. Youth Shed, Ravenshoe Community Centre, 3 Bolton Street, Ravenshoe. **Event host: Kathy – 40977864**

CASSOWARY COAST - Sunday 17th 11am-3pm Trade & Social Gathering - Johnstone River Community Gardens, Flying Fish Point Rd, Innisfail. Bring a plate to share, something to cook on the BBQ if you wish, your own plate and eating utensils. Lunch will be at 12 noon. Trade starts at 1pm. Tea/Coffee by gold coin donation. A child-friendly venue. **Weather permitting - ring for confirmation! Event host: Suari - 04 03115261.**

CAIRNS - Tuesday 19th 6.30pm LETS Trading is encouraged at Permaculture Cairns monthly meetings at the Flexible Learning Centre, 90 Clarke Street, Manunda.. **This is a Permaculture Cairns Event.**

YUNGABURRA - Saturday 23rd 12-2pm Trade at *that retro cafe*, Shop 2/20 Eacham Rd (in between Miss Megs and My Habitat) Drinks available for 100% Bartles, Bring \$ for lunch or cakes and a table or blanket to display your wares. Children most welcome. This event is **directly after the Yungaburra Markets.** **Event host: Melitta - 0437216122.**

MAREEBA - Saturday 30th from 10am till 1pm Trade Day, 19 Kenneally Rd, Mareeba, children welcome. 5 weekends this month & Mareeba is keen to get those Bartles moving! Come along and join at our newest trading venue. Bring along something to trade and a plate for shared lunch. **Event host: Coco - 40924396**

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 if you don't yet have a LETS account.

tablelandlets@gmail.com - 4096 6972 - lets.clearwater.com.au - www.communityexchange.net.au

Informative, useful and Interesting Websites:

<http://www.greenliving.com>: An Australian website for supplies for fermenting, cheese and yoghurt making, lids for bottles etc.

<http://www.nutri-techsolutions.com.au>

<http://www.culturesforhealth.com> A USA website with lots of info. recipes, free eBooks on fermenting foods and lots more. You can sign up for their weekly newsletter. "And therein lies the lure of fermentation. As Pollan writes in Cooked, its deliciousness is the by-product of decay, and decay is a fermentor's dream and a food regulator's nightmare. But the times they are a'changing: recent medical research has concluded that one of the problems with the Western diet is the absence from it of live-culture foods, while another study has linked the intake of certain probiotics found in some ferments to improved mental function and mood. We need more decay, it seems, not less. So pass the sauerkraut, please. I've heard it can even cure middle age."

<http://care2.com/greenliving/>

This website has lots of interesting topics, food that is banned elsewhere but still available in the USA, good alternative recipes for making healthy food eg. ice cream and lots more.

<http://manybooks.net> A place that offers free downloads of books – check out "Farmers of forty Centuries" by FJ King written 1911 after or during a trip to China, Korea and Japan. This incredible book explains how these peoples have been growing food for centuries. Check to see if Bread from Stones is there, another interesting read.

<https://www.organicgardener.com.au> Lots of info and a great planting guide for the year.

<http://rfcarchives.org.au/index.htm> - Rare Fruits council of Australia – Fruit/Nut Trees and lots Recipes

August Date Claimers

17th August – Biodynamic workshop Ravenshoe
17th August – Lets trade day at Innisfail Community Garden
19th August – Permaculture Cairns info meeting night at Flexible Learning Centre
23rd August – All about Earthworms – Permaculture Cairns SITA grant workshop
24th August – Seed Savers at Bungalow Community Garden
30th August – Biodynamic workshop – calendar explained
30th August – Permaculture Stall at Bunnings community gathering

6th September – Introduction to Tropical Vegetables and cooking tropical veg. workshop

That's it from me again, hope you find it informative and challenging.
If you have something interesting and would like to share it, please email Carol at -
workshops@permaculturecairns.org.au.

PERMIE RESOURCES, & SERVICES

RESOURCES:

“Notes from the Workshops Booklet” All notes from the Permaculture Cairns Resilient Communities Workshops 2012 are now available for purchase at meetings and at Enviromart Australia on corner of Scott and Aumuller Street,

TOPICS COVERED: How to Grow your own Fabulous Organic Food, All about Earthworms, Growing Microgreens, All about Wicking beds, All about Aquaponics, Composting, Creating a raised garden bed, Tropical plants that grow all year round and recipes for cooking these, Drying and preserving excess fruit and vegetables, Balcony and patio gardening, Hot to use The Bokashi Bucket, Waste not want not – recycling organic waste, Poultry in the city, Vegetables for the small tropical farm or garden, and a Sprouting guide.

This is a MUST HAVE it's FULL OF LOCAL KNOWLEDGE about living in an environmentally friendly way and growing food sustainably in the tropics.

The booklet would make a great gift for anyone wanting to grow their own food in the tropics.

Edible Tropical Vegetable Plants: Tropical Vegetables and useful Plants available from Enviromart Australia on corner of Scott and Aumuller Street or phone Carol 0414900717

SERVICES

Do you need help to plan or build your garden???

Bruce Zell, Director of The Back Yard Revolution is a Permaculture Diploma Graduate, Licensed Structural Landscaper and has extensive experience in landscaping, food garden design and implementation, Project Management and more.

Contact Bruce for more details-
email: brucezell@gmail.com, www.backyardrevolution.com.au or
Mob. 0404 9944 528

Don't have much space for growing? Then contact Tegan for advice on wallgardens, or wicking pots for growing plants.

Garden of Tegan – Readymade moveable gardens, suitable for patio or balcony. A wicking bed of herbs and vegetables that will be enjoyed all year.

Contact Tegan 0402 853 903

Please note Memberships fees for 2014 are due and payable the 1st January 2014
Memberships form may be completed online on our web site and emailed to us from there.



Permaculture Cairns

Membership Form 2014

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):

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.....
.....

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-

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Permaculture Cairns Public Meetings - All Welcome Third Tuesday of month Feb to Nov (Second Tuesday Dec). Doors open 6.30pm, meeting starts at 7pm at: Flexible Learning Centre, 90-92 Clarke St. (off Hoare St), Manunda

Enquiries

President: Carol Laing workshops@permaculturecairns.org.au

Secretary: Tegan McBride: info@permaculturecairns.org.au

Treasurer: Jenny McGrath treasurer@permaculturecairns.org.au

Website: www.permaculturecairns.org.au