

Sustainability 2018

HINTS FOR LIVING A SUSTAINABLE LIFE

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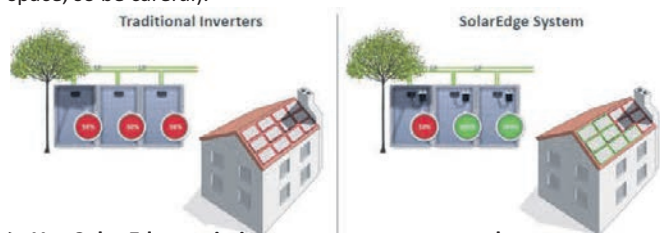
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Can we fix it? Mullum Repair Cafe can

Perhaps people have forgotten that you can repair things or maybe they've forgotten how to repair things but it can often be the case that repairing something is, these days, more expensive than getting a new one – ever tried getting a cracked phone screen repaired?

But it doesn't have to be that way. The Repair Café in Mullumbimby (RCM) has been looking at ways to fix your stuff, take care of the environment, and be part of a sustainable community for several years.

'We throw away piles of stuff – even things that practically have nothing wrong with them and could easily be used again after a simple repair,' said Ken Bright, who runs the Repair Café every Saturday.

'Visitors who bring broken things to Repair Café Mullumbimby say that they would have thrown them away if we didn't have this workshop. We have many success stories and all efforts are made to repair anything. We are often asked "Do you fix X?" and the answer is "anything is possible". We even surprise



ourselves when we brainstorm a tricky repair and have success,' said Ken with a smile.

'The team at RCM are a dedicated group of volunteers who are always looking for new people to get involved. People with a skill or passion for sewing, bicycle repairs, carpentry etc are invited to come and help people fix items they have brought in or providing advice.

'People volunteer for a variety of reasons from "contributing to the community and environment" to "meeting new people" and empowering them to learn

about repairing and recycling. There is also the satisfaction that volunteering provides in an environment that thrives on respectful communication and humour. It is a fun way to learn and to meet new people and for people to be valued,' Ken said.

The Repair Café has also gone into partnership with MullumCares and have set up a Tool Library, based on the Library of Stuff.

'The idea is that when somebody wants to do some repair or new work at home they can borrow the tools without having to buy them and then have them sit around rusting in the garage,' enthused Ken. 'It is a great way to share resources and cut back on the production of new equipment.'

If you would like to find out more, get some help with repairs, or volunteer your time you can call in to the Repair Café on Saturdays from 9am till noon at the Byron Community College, cnr Burringbar and Gordon Streets, Mullumbimby, or find them on Facebook 'therepaircafe'.

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Eat the locals: Taming wild food in the northern rivers

Charles Boyle

Since colonisation began, the northern European industrial agriculture model has been imposed on Australia's eco-systems to feed the increasing millions of people.

However, our productive and relatively efficient agricultural systems incur huge costs; growing European species here in vast monocultures requires overcoming deficient soils, low rainfall and pests and diseases the crops have no defences against. Most of our agricultural crops are not suited to Australian conditions. The underlying premise of our agricultural production needs to be re-evaluated.

Modern crops originated as low-yield wild foods that were gradually selected and hybridised over thousands of years. Much of the selection process was based on the cultural requirements of the farmers of the day, and among the great driving forces that shaped European agriculture were the harsh northern winters and the requirement to store food.

Many of today's crops have been selected by winter

hoarders – potatoes, carrots, wheat, apples, oranges, etc.

To the casual observer, Australian bush foods have not been so carefully selected. But closer understanding of Indigenous culture reveals that Aboriginal people did indeed select food species and dispersed them across the continent. Australia's bush foods have supported millions of Indigenous people for thousands of generations and they are among the world's oldest foods.

Bush Foods

During the famine of 1789–91, Australia's first settlement at Sydney Cove owed its very survival to wild food – fish, oysters, marsupials, fruit and vegetables. It's time Australia returned to the bush for future agricultural produce.

It makes perfect sense to grow crops that are naturally adapted to deficient soils, drought and local pests and diseases, but we need to adapt these foods to suit our cultural food requirements. And therein lies the problem; Australia's food plants have been selected by nomadic tribes, not sedentary farmers.



Fingerlimes and native tamarind are just two of the native Australian fruits that could be developed into sustainable crops in the northern rivers. Photo Charles Boyle



In general Australian native fruits and vegetables are designed for immediate consumption, not storage, so are difficult to send to market. Neither do they generally suit high-density industrial monocultures. Perhaps most importantly, many species don't suit our sugar-laden palate. Australia has many really good bush foods that don't taste great. Overwhelmingly bush foods need processing, which adds to the cost of production.

Most native foods are, indeed, merely flavours and garnishes – lemon myrtle, mountain pepper, even fingerlimes. Davidson's plums require significant processing (and sugar) to render them palatable. In terms of utilising

nutritious bush foods, we have a long way to go. Bunya nuts are left uneaten and many people shudder at the thought of eating witchetty grubs, while many species are yet to be even considered.

Bauple Nut

The big exception is the star of Australian bush foods, the macadamia nut aka Bauple nut, native to northeastern NSW and Queensland. The first macadamia orchard was planted at Rous Mill near Lismore in 1888 by Charles Staff – on a farm that still produces macadamia nuts today – but by 1910 the macadamia had become a major agricultural industry in Hawaii.

It wasn't until 1997 that

Australia briefly surpassed the US in macadamia production, but since 2012 South Africa has been the world's biggest producer of the nuts.

The northern rivers is ideally situated to be a major producer of bush foods and is leading the way in commercial production. Fingerlimes, Davidson's plums and macadamias are all native to this area.

At present this is a niche market and most producers are 'lifestyle' farmers who aren't interested in monocultural high-density, high-yield production. However, careful selection of commercial strains, targeted marketing and innovative processing are increasing the uptake of these foods into mainstream

cuisine and, if supplies can be guaranteed, eventually onto supermarket shelves.

Figures are scarce, but in 2010 the federal Rural Industries Research and Development Corporation (now AgriFutures Australia) estimated the farm-gate value of native food production to be around \$20 million, but value adding (ie processing) could increase the total by 500 per cent, making the industry worth close to \$100 million. The workforce was estimated to be around 1,000, half of whom are Indigenous people living in remote communities. That was eight years ago, and while the industry continues to grow, the absence of current figures indicates a lack of interest on the part of governments.

We are at a unique place in history where our knowledge of native foods is forging a modern Australian cuisine that incorporates native fruits, nuts, grains, roots, honey, and meats. There are many areas demanding more research, especially native fungi, herbs and spices, and seaweeds. Native foods are environmentally and ethically sound. Eat them.

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Veganism: a choice for the planet's survival

Eve Jeffery

I am a vegan, oh yes I am, yes I am. While many of you are now having conniptions over the pure insanity of that fact and some of you are already writing letters to the editor about my militancy, because I must be militant because I'm a vegan right? (And probably a pot-smoking lesbian anti-vaxer who wears an aluminium hat.) Let's firstly have a look at the definition of that. The vegan bit.

So, I'm not a vegetarian who sucks on the juice of bees, goats and cows and other animal 'by-products'. I'm not a pescatarian who says that I'm a vegetarian but I do a bit of fish flesh. What being a vegan means is not eating, wearing, bathing in or supporting things stolen from an animal or its mother.

More often than not, it also means actually caring about the welfare and the rights of animals and not just banging on about how much 'I love animals – but bacon'.

But in this instance I'm not going to show you photos of cows suffocating on death boats; I'm not going to talk about baby sheep timed to

be born in freezing mid-winter fields in Victoria because that delivers 'spring lamb' to the butcher, and you don't get to see the three little pigs* packed off into a truck on their way to a local slaughterhouse, their cute winking noses twinkling at me through the back slats of their cage, because it's a glorious sunny day and they are on a fun road trip and don't know what hell is waiting for them.

This is about the sustainability of veganism, or rather, the UN-sustainability of the dead-flesh and dairy industries.

For starters I am going to head y'all off at the pass – yes I know food animals live in paddocks and you also need paddocks to grow edible plants (because no vegan ever heard that argument). So let's go back to the drawing board...

Veganism wins the sustainability stakes on several major points. Those issues include deforestation, species extinction, the collapse of fisheries, land use, and the big double-bangin' 'C': Climate Change.

In these dry times, the very hairy scary issue – water



Friend not food – local midwife Heather Dunn cuddles a rescued lamb at Sugarshine Farm Sanctuary. This gorgeous fluffball was left to die at birth, alone, in a freezing paddock. For more info visit: www.sugarshinefarm.com.au. Photo Tree Faerie

– is something we can all relate to, so it is a good focus point for the Vegan v Omnivore debate.

It may be argued that rice uses up to 40 per cent of all irrigation water worldwide. That's a fact, but if you consider that a lot more people eat rice than steak, there are other animal food figures that stack up higher.

Your average dairy cow eats up to about 45 kilos of food and drinks up to 85 litres per day to produce up to 26 litres of milk. Beef cattle need

up to 60 litres of water a day and a mature sheep on dry pasture needs about 8.5 litres per day. Your dairy cow drinks a bit over 30,000 litres a year.

All of this sounds a lot but nothing stands out to make you want to give up eating meat until you consider that producing just one kilo of chocolate needs 17,196 litres of water (a lot of that is probably watering the dairy cow), one kilo beef needs 15,415 litres and a kilo of lamb takes 10,412 litres; interestingly, our water-greedy rice needs only

2,497 litres of water per kilo.

Our beef-to-rice comparison tells us that all things being equal (which they never are), an average adult cow (544kg) needs about 1.8 acres of pasture whereas you can grow about six times more rice in the same area. That is, beef produces around 302 kilos per acre against rice's 1,860kg per acre, but the kilo of rice needs less than one sixth of the water.

The list of litres of water consumption per kilo averages are: pork 5,988, butter 5,553, chicken 4,325 and cheese 3,178. Things such as olives, rice, pasta, bread etc follow on until we get into the plant-based staples such as apples (822), potatoes (287) and tomatoes (214).

The shockers are when you calculate that one egg needs 196 litres and a glass of milk needs 255 litres – that's right folks, it takes 1,020 litres of water to make one litre of milk – black tea anyone?

If we just look at the weight of yield per area, deforestation for rice is certainly more economical not only for the number of humans you can feed, but also for the number of trees left behind

to offset greenhouse gas emissions.

As it would take half a page to cite my sources – I'm not going to, which leaves me open for criticism I know, but, the anti-vegans will be out for my blood no matter what – so, meh to you! What I would like to say is this: I know it's unrealistic, no matter my opinion of animal rights, for humans to stop consuming animal products, but if you want to eat sustainably, every time you swap meat for a plant-based meal you are doing a little bit to save the planet.

And don't talk to me about protein – gram for gram hemp seed has more protein than beef. So there!



*Okay I lied – you DO get to see the three little pigs.

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Sustainable forestry: a lost opportunity

Dailan Pugh

I know that it is possible to log native forests on an ecologically sustainable basis provided that the highest conservation value areas are avoided, the natural forest structure is retained or restored, only the surplus trees are removed, and damage to the understorey is minimised. Though the volume that can be removed and the care needed are not compatible with industrial forestry.

The last opportunity to manage state forests on an ecologically sustainable basis was squandered in 1998 when sawlogs were over-estimated and intentionally over-committed.

Since then the emphasis has been on cutting every corner to obtain every tree they can. This has engendered a cavalier disrespect for environmental values. I regularly find major and repeated breaches of environmental laws that go unpunished and unrepented.

There is nothing sustainable about current forest practices on public lands, and it is about to get dramatically worse. The NSW government

has allowed the Forestry Corporation to re-write the logging rules, and they're all about timber at any cost.

We fought long and hard to get all rainforest and most old-growth forest in state forests protected from logging as part of the reserve system more than 20 years ago. Now they are intending to open up protected old growth forest for logging again.

As an outcome of our blockades at then Whian Whian, Nullum, Mebbin and Wollumbin state forests in 2005 we forced the Forestry minister to agree to undertake pre-logging surveys for threatened animals and plants, and to establish exclusion areas around them.

Now they are intent on removing the need to look before they log for most threatened species, even koalas. It will once again be open season on the habitat of most threatened species.

On top of removing widened stream buffers around record areasthat contain threatened species (notably frogs), the government is intending to reduce buffers on vital headwater streams from a measly 10m down to 5m,



They are intent on removing the need to look before they log for most threatened species, even koalas

when the evidence is that we should be increasing them to 30m if we want to begin to restore our rivers' health.

Though most significantly they are intending to dramatically increase logging intensity throughout our public forests, going so far as to zone 140,000ha of public forests south from Grafton to Taree for clearfelling. As logging intensity increases our biodiversity plummets.

We are privileged to live in the Border Ranges, part of an Australian and world biodiversity hotspot. We have cleared half the region's forests and logging has severely

degraded large expanses of what is left.

Logging opens up the canopy, allowing lantana to invade; bell miners thrive in the altered habitat, chase away most other birds, and 'farm' sap-sucking insects (psyllids) that drain the life out of the eucalypts. This is the antithesis of sustainability.

Some 26,000 hectares of public forests in the NSW section of the Border Ranges forests are now dead or dying; it will cost hundreds of millions to repair the damage, yet the government is intent on continuing to log affected forests, spread the

dieback and do no environmental repair.

In 1998 the government gave 20-year guaranteed annual volumes of timber to sawmillers free of charge. Since then NSW taxpayers have spent \$13 million buying back the timber and supply levels have almost halved.

The NSW and Commonwealth governments are intent on entering a new Regional Forest Agreement based on the new logging rules and inflated resource assessments to lock up our public forests for the loggers for another 20 years.

Forests are incredibly important to our wellbeing. They support a plethora of our wildlife, attract rainfall, maintain stream flows and quality, provide recreation opportunities, provide health benefits, and attract tourists. Most importantly, in an era of runaway climate change, they take in our carbon dioxide, store the carbon and give us back oxygen. We have run down their carbon storage by more than 50 per cent.

One of the easiest measures we can take to significantly mitigate our carbon emissions is simply to stop

logging public native forests.

I tried for decades to cajole and badger the NSW government into ecological sustainable forestry. With landscape-scale ecosystem collapse now underway, and the inadequate environmental protections being gutted, I know that it is not achievable.

Plantations currently provide 86 per cent of our sawn timber requirements. While they too have their problems, we can resolve them if we try. The resources are there; you just need to convince the government to complete the transition to plantations and fund the rehabilitation of our public native forests rather than their degradation.

With state and federal elections due within the next year, and three marginal state electorates and two marginal federal electorates in the northern rivers, you can make a difference if you can convince the political parties that if they want your vote they will need to guarantee they will stop the degradation and protect our public native forests.

• Dailan Pugh is a member of the North East Forest Alliance.

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A Pool for All Seasons: Mandy makes it middle class

Mandy Nolan

One of the signs of achieving one's middle-class-dom is having your very own suburban swimming pool. You get to use the catchphrase 'by the pool' in casual conversation.

For years now I've secretly pined to be one of those people with a pool. It comes from growing up as one of the working-class hordes who spent hot Queensland summers running through the sprinkler. I was 26.

For years I've blown up backyard inflatables and immersed myself with my red-faced children. I dreamed of midnight nudie dips and bawdy barbecues by my very own private water feature.

Conventional swimming pools are well known to be an unnecessary indulgence that impact on our environment. Chemicals such as chlorine evaporate into the atmosphere contributing to the production of greenhouse gases. Basically, to keep a stagnant pool of water clear you have to pour in shitloads of chemicals. Or do you? Could middle-class Mandy really have the pool she so desired and still be

environmentally sound?

Is it possible to have your own pool AND reconcile the chasm between action and belief? My husband told me it was. He never wanted one of those designer pools I'd been googling. The one where he would be spending most of his life managing a sterile body of water. So my husband put forward an idea: let's build a natural pool.

I hated the sound of it instantly. *Natural* for me is usually a codeword for 'shit'. This is a further challenge for me as my tastes don't align with my politics in the slightest. I like unfussy designs. Natural isn't that. Natural is unruly. It's dirty. John had once expressed his wish to have a fish farm. I imagined a stinky pond full of giant terrifying carp. Was this his way of sneakily making it happen?

But then we started doing a bit of research. Natural pools can be incredibly beautiful. They can be built in a huge variation of styles and shapes and the idea of having a pool that was a more integrated part of my garden, rather than a stark water coffin was appealing. Even to someone like me who had an



aversion to 'natural'.

It's dug out and lined similarly to a dam and then rocks hold the liner in place. Basically in a few months you build what centuries of natural terraforming creates: your very own waterhole. And you can choose the shape, the colour of the rocks; the style of the waterfall and the plant life. You get to be god! (in a puddle of water!)

A conventional pool is just a pool. For the colder months it sits there unused while you continue to administer chemicals, check levels, operate the creepy crawly. A natural pool

is an impressive water feature where birds drink and bathe, where tiny fish live, where frogs congregate and have wild froggy sex orgies. It's this incredible ambient place that isn't just about my being a wanker on Instagram in a poolside pic. Our pool is not just an architectural add-on. It's an ecosystem.

So with the help of a local company we built a natural pool. It's amazing. I live in the suburbs but I have a beautiful rainforest pool right at my front door – complete with waterfall. You have to have a waterfall because the key to

keeping the water clean is to keep it moving.

There's also other benefits of having natural clean water – like when you've forgotten to fill up the dog bowl. The other day I found my dog Elvis drinking out of the water-fall. It's probably the freshest water he's ever had.

There's also no ugly creepy crawly making its way around the pool, entangling your legs like a giant blue sea monster. Once you've set it up, the pond is self-cleaning. The tiny fish are busy eating organic matter and the plants help maintain the pH level.

Instead of tipping chemicals in every few days we have had to grow a wetland.

You can use whatever waterside species work but I think indigenous species are probably best. We haven't planted all of them yet but I'm excited about planting a smaller species of water lilies so we can enjoy a small water-top flower garden! The reason I haven't planted all our water plants is that natural pools are seasonal. Right now in winter ours is dormant. When spring approaches the pool will go into full active swing again as it literally comes alive. I find that really beautiful. It's like our pool is sleeping. And it's perfectly clean. No chemicals. No labour. Crystal-clear water and it takes almost zero maintenance.

The crucial factor for a natural pool is to keep the waterfall going, so the only input from the grid is power – but if you've got solar – which we have – then it's operating with no carbon footprint. And on the upside, if the apocalypse comes we can turn it from a pool, straight into a fish farm. John's fricking fish-farm fantasy...

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Non-profit research points to brighter futures

Michael McDonald

Among the dedicated individuals working for a sustainable future is the team at the non-profit Australian Technology Association (ATA), based in Melbourne. Their efforts have helped to educate the public over the last 38 years.

ATA's name is now almost a misnomer as the 'alternative technology' it has promoted for decades is now becoming part of the mainstream. Renewable energy sources such as solar and wind are being taken up rapidly, in spite of half-hearted policy making by the federal government, still supporting old technology based on coal.

As part of its drive to educate, ATA produces two publications, *Renew* and *Sanctuary: modern green homes*. These have a combined readership of more than 120,000.

ATA also produces regular reports on the growing uptake of sustainable living. Among the latest is *Household Fuel Choice in the National Electricity Market*.

According to ATA, owners

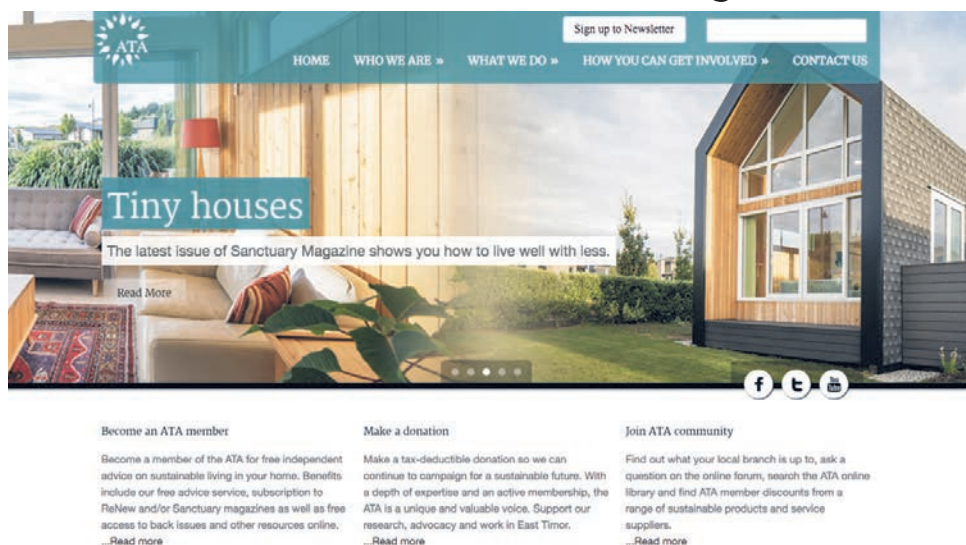
will be between \$9,000 and \$16,000 better off over ten years if they establish their new home as all-electric with a 5-kilowatt solar system rather than gas-electric with no solar.

New homes with efficient electric appliances such as heat-pump hot-water systems, split-system air-conditioners and LED lighting working with large solar systems make sense economically, according to report co-author and ATA energy analyst Dean Lombard.

'There is just no reason economically for new homes to be built with both electricity and gas,' Mr Lombard said. 'This has been the case for many years in Australia's north, but it's now also clearly the case in colder climates like Victoria and Tasmania.'

'Heat-pump hot-water and split-system air-conditioning systems are just far more efficient than gas appliances and solar systems are cheaper than ever.'

The report, funded by Energy Consumers Australia, calls on new home buyers as well as the building and energy industries to be



From ATA's home page: a slide supporting the Tiny House movement.

educated on the substantial value of all-electric, solar-based homes. It also found there needed to be a review of policies and programs that subsidised or supported the expansion of gas networks.

'Rolling out new gas infrastructure is simply not efficient and is not in the long-term interests of residential households. It locks people into higher energy costs in the long run,' Mr Lombard said.

The Cape, at Cape Paterson on Victoria's Bass Coast, is a new 230-dwelling housing

estate where all homes will be electric only and have rooftop solar systems as well as efficient electric appliances. According to the ATA, homeowners at the estate will save a total of \$2 million over 10 years by not using gas.

'By eliminating gas from the whole estate and replacing with the highly efficient all-electric home-operating systems and solar power, our householders avoid annual gas usage and gas connection costs, as well as the upfront construction costs of connecting to gas

and running gas plumbing through homes that occur in gas-connected estates,' said The Cape's director, Brendan Condon.

In addition to its publications the ATA runs Speed Date A Sustainability Expert and the popular Sustainable House Day.

For more than 17 years, Sustainable House Day has

provided an opportunity for hundreds of thousands of people to visit some of Australia's leading green homes – ones that are not only environmentally friendly, but cheaper to run and more comfortable to live in.

Sustainable House Day gives visitors a chance to inspect firsthand houses that have been designed, built or renovated with sustainability in mind as well as the opportunity to talk to owners and receive unbiased advice.

According to the ATA, in 2017 29,049 people visited 206 homes across Australia. Online and print media stories reached a targeted audience estimated at over 159 million, based on circulation/readership figures.

Gold coin donations raised from open homes reached \$12,060.85, which went to charities chosen by individual homes. This year Sustainable House Day will be held on September 16.

Further information: ATA www.ata.org.au.

Sustainable House Day www.sustainablehouseday.com.

And further to the aims of Sustainable House Day, check out the collaborative project on liveable design at Liveable Housing Australia www.livablehousingaustralia.org.au.

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Local councils get sun smart while Byron goes Butt Free

Eve Jeffery

As families, streets, towns, states and countries, we all look to our leaders in the hope that they can effect positive change. On a lot of issues, the decisions that are made in local councils have more bearing on life in a community than those made at a national level.

We often grind our teeth about the seemingly erroneous choices made in the shires but, on the whole, our local councils are getting it right, or at least doing their best to get things right when it comes to sustainability.

Ballina

The northern rivers offers plenty of beautiful sunny days and Ballina Shire Council is not letting them go to waste. Council has solar panels installed across eight of their facilities to harness the sun's energy and to reduce operating costs.

The largest sites are the Ballina Wastewater Treatment Plant and the recently redeveloped swimming pools in Ballina and Alstonville. With 1,200 panels the treatment plant upgrade

was, at the time, the largest bank of solar panels in regional NSW.

'The Wastewater Treatment Plant alone produces over 466,000 kiloWatt hours per year,' says said Ballina Shire mayor David Wright. 'This equates to approximately 414,740 kilograms in reduced CO₂ emissions each year. This saving is equal to removing 60 average households from the electricity grid.'

From power to water Ballina is leading the way in sustainability. Earlier this year, they launched a thought-provoking animation series to tackle waterways health across the region. The vibrant animation series was a collaboration between local Richmond River catchment councils and asked the community to *Love it or Lose it*. View the animations online at loveitorloseit.com.au.

Byron

Byron Shire is also looking toward the sun as one of five places in Australia that have been selected to take part in a feasibility study to see if it could be a suitable location for a solar garden.

The Social Access Solar



Garden project is being led by the University of Technology Sydney's Institute of Sustainable Futures and the Community Power Agency in collaboration with 17 partner organisations including Byron Shire Council, and local community energy group COREM.

Byron Shire mayor Simon Richardson said solar gardens are very popular in the USA because they make the option of solar power accessible to people on low incomes or who are renting.

Byron also wants to you move your butt – Butt Free Byron Shire aims to reduce cigarette butt litter through integrated approach education and awareness, infrastructure and enforcement.

Council is installing new public-place butt bins across

the Shire. Throughout the Butt Free Byron Shire campaign, education programs will run but the big move is getting butts off the beach – it is now illegal to smoke on beaches in the Byron Shire!

Lismore

Continuing the solar theme, Lismore is also talking about a feasibility study for a new mid-scale solar plant happening this year. Though no money for the plant is actually budgeted yet, it's the key part of the Renewable Energy Master Plan to enable Council to self-generate 100 per cent of its electricity from renewable sources by 2023.

In January this year, Lismore City Council and Farming the Sun officially launched the Lismore Com-

munity Solar initiative – the first council/community-owned solar farm in the country including Australia's largest floating solar farm.

The innovative floating design provides capacity for the solar farm to expand across the overflow ponds and Council's aim is to eventually power the sewage treatment plant from 100 per cent solar energy.

Tweed

In an effort to battle our refuse, Tweed Shire Council has introduced an organics household waste service to more than 25,000 urban houses and duplexes. The system began 1 July 2017 as part of a new three-bin system to direct more food waste away from landfill. The service assists the community to better align with the state government target of 70 per cent domestic waste diversion from landfill by 2022.

Tweed Shire instantly doubled the amount collected in the green bin from the implementation of the new weekly organics service, increasing the collection of organic waste from 400 tonnes per month to nearly

1,000 tonnes per month.

Since its introduction a total of 10,071 tonnes (equivalent to 322 humpback whales or 7,194 Holden Commodores) have been diverted away from landfill.

Heading back to the sun, Tweed has set a target to produce 25 per cent of its own electricity from renewable sources by 2022, and 50 per cent by 2025. Council will meet its '25 per cent self-generation by 2022' target by investing \$5.2m and achieving \$1m in annual energy cost savings through: energy efficiency improvements in streetlights, lighting, wastewater treatment and heating/ventilation systems and installing 921.2kW of rooftop solar at 15 Council facilities.

To achieve its 2025 target of 50 per cent self-generation of renewable energy, council will investigate opportunities for larger solar and battery storage installations, looking for a positive return on investment. Currently, the estimated cost of \$5.3 million for these projects and estimated \$530,000/year savings suggests these initiatives are only marginally cost effective.



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Is the hemp revolution finally here?

Paul Bibby

Students studying algebra and chemistry at Cape Byron Steiner school in years to come may not be fully aware of the history that will, quite literally, surround them.

As the school's new Maths and Science block takes shape, the walls of the building are being constructed with a sustainable building product made from hemp.

It is the first time the particular product, made by local company Australian Hemp Masonry (AHM), has been used in a commercial construction project in Australia.

The panels are an incredible insulator, are made from sustainably produced hemp and, because of their organic properties, absorb carbon for years after construction.

'I don't know of any other substance that's an insulator, that's hydrothermal, that has breathable warmth and involves carbon storage in the building,' says managing director of AHM, Klara Marosszeky.

Social entrepreneurs are taking up opportunities created by legislative changes

allowing hemp's use to be commercialised to produce and sell a range of hemp-based products ranging from burgers to building materials.

Hemp food

The growth in hemp-based food products has been particularly notable in the past seven months since the food regulator legalised their sale.

The president of the Australian Industrial Hemp Alliance, James Vosper, says the food industry is finally beginning to blossom.

'A lot of people think that hemp food just sort of arrived,' Mr Vosper says.

'But it was actually a long long journey for us. I started working on the campaign for legalisation in 2010 and I was far from the first to join it.

'Now we've got hemp food products on the shelves in Coles and Woolies. The great thing about hemp food is that you can grow it on a relatively small holding. That makes it a great option for small producers.'

Companies such as Bangalow-based Hemp Foods Australia – Australia's largest certified hemp-food whole-



Amete in a field of locally grown hemp. Photo Tree Faerie

saler, retailer, manufacturer and exporter – have shown that the big players can also make it in our region.

The company's hemp seed, flour, oil and skincare products are now on shelves around the country and are rapidly expanding into overseas markets.

'Australian products are already very highly regarded particularly when it comes to health and wellbeing. Plus, we have 50 per cent of the world's organic farmland so we're in a great position to

capitalise on the hemp-food market,' Mr Josper says.

As the hemp-food industry booms, the development of hemp-based building products has been making significant strides.

'Building materials at the moment have a huge carbon footprint,' Ms Marosszeky says.

'The construction sector is responsible for a third of Australia's carbon emissions.'

AHM's building products are carbon positive, thanks to their insulative properties, and the fact they absorb CO₂

for years after construction.

Challenges

While the future may be looking bright there are a number of challenges for the local hemp industry, and more broadly, the country.

There are only a handful of commercial hemp-growing operations in the northern rivers and they are in the very early stages of development.

While there is plenty of experience in growing cannabis for medicinal and recreational purposes, the skills needed to grow, harvest and manufacture hemp for commercial purposes are in relatively short supply.

The region is also without its own hemp-processing plant, meaning that any raw product produced has to be trucked out increasing the size of the carbon footprint.

'Have we got the climate? Yes. Soil? Yes. Knowledge about potential uses? Yes. There are probably more people in this region who know what you can do with hemp than anywhere else. But I'm curious to know if the innovators are here,' Ms Marosszeky says.

A significant impediment

to the development of a local industry are the country's highly restrictive medicinal-cannabis laws. The incredibly high hurdles that must be cleared to obtain a licence for growing or manufacturing cannabis for medicinal purposes in Australia have locked the vast majority of would-be producers out of the industry.

It appears only the larger players – particularly big pharma – are getting a seat at the table.

Mr Josper sees this as a missed opportunity for the northern rivers and other regional areas.

'I accept that you can't just have a free-for-all where you're handing licences out, but the laws and regulations at the moment are very restrictive,' he says.

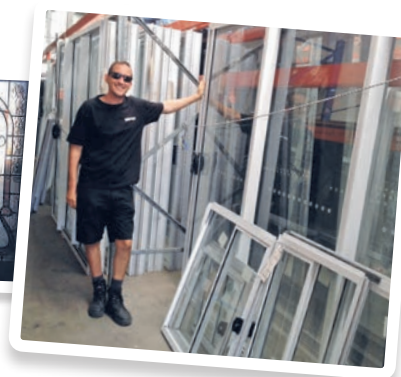
'It's a shame because the medicinal cannabis and hemp industry have the potential to rejuvenate communities that are seeing a deterioration owing to lack of jobs and services.'

Perhaps by the time those Steiner school students are attending their own children's graduations, the hemp industry will be one of the region's strongest.

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The Echo's Property Insider column has been following the building of confessed 'shedaholic' Kate Le Messurier's 5-bed, 4-bath shed home. Kate's goal for the project was to see how, for the least possible cost, she can build her home without compromising her standards or aesthetic.

The dimensions for 'The House' are 20 x 9 metres with a 20 x 4 metre veranda, with the second shed being 13 x 9 metres. The 20 x 9 metre shed will house two bedrooms, ensuite with walk-in robe, second bathroom, a spacious kitchen with butler's pantry, laundry, and a 12 x 7 metre living and dining area. Also featured will be a fireplace with a floor-to-ceiling glass window for outdoor viewing.

The second shed, which is 13 x 9 metres, will hold three bedrooms, two bathrooms, an office and living room. This is intended as guest quarters for family and friends. The two sheds will be connected by an eclectic covered walkway that is made of old windows, doors, recycled timber and pallets, flanked by a gorgeous tropical garden on either side.

Now that Kate has completed the first building, here is a recap of what has happened and the stunning results.



There is quite a process before a slab can be poured. Firstly, the rough in for the plumbing needs to be installed, inspected and approved by council. At the same time, the building consultant has to sign off on the work to specifications before the slab can be laid. This process took three days.

After the council requirements and home-building contract and insurance were approved, it took all of 10 days from the pouring of the first slab to having both sheds complete and ready for the next phase of the build.

Next up, the frames. The engineering plan at this stage of the build is very specific, and the builders have to work to those exact specifications to ensure they meet the engineer's plans. Using the right tools of the trade and a scissor lift to reach the height of four metres and all the other difficult spots, this part of the build took just two days. It was incredible to watch how efficiently the shed-building team worked together.

Now for some walls and a roof. Colorbond corrugated wall cladding in the colour Surf Mist was used for the walls, and corrugated roof cladding in the colour Shale Grey for the roof. It took just four days for the walls and roof to be completed, like watching a fast-forward movie with

everything precisely fitting together.

Kate advises that it is really important to insulate both the external walls and all the internal walls. This controls the temperature and also soundproofs all the different areas. The internal framework has been completed and inspected and approved by the private certifier Craig Nowlan from Techton Building Services. Techton are accredited certifiers with principal certifying authorities such as shire councils and Kate has worked with Craig for more than 10 years on different projects. 'He oversees the whole build from planning to building inspections to sign-off for the concrete slab, framework, waterproofing in all areas, and also does the final inspections when the building is finished. He is a great adviser and a fount of knowledge in all areas of the building industry.'

Kate is a passionate advocate for solar power and has installed a completely off-grid solar-plus-battery system. It is a good idea to have the shed builders allow for solar panels when they do the shed design, even if you do not planning to use solar initially. Kate has used a solar-plus-batteries off-grid system supplied by The Solar Man, based in Tweed Heads in all her builds.



Pouring the slab.



The frame goes up.

THE FUN PART

Kate found some fabulous secondhand windows and doors from the secondhand and salvage yards in the area. The 21 double-hung timber windows that had been removed from a high school in Lismore were a great find. 'I got them from AJ Magnay's in Lismore. AJ Magnay's have been a great source of secondhand materials, doors and windows over the all the years I have been building,' she said. Kate managed to source doors from North Coast Recycled Building materials in Mullum and said, 'luckily they all seemed to fit in with the look that I wanted for the house'. Truth be told, there is no luck about it; Kate has a wonderful eye for such things. She is undoubtedly a skilled project manager; however, it is her ability to visualise how the eclectic mix of secondhand materials she sources will work together to create and enhance her environment that puts her shed-build projects in a league of their own.



Kate also bought the door for the entry to the house from North Coast Recycled Building Materials. The glass lets in beautiful natural light and from within offers a view of the beautiful trees outside. 'I just love this door,' said Kate. 'They have a fabulous range of doors and windows and Mark and Simon are great at helping you find what you want before building starts.'

The next step is the rough-in of electrical and plumbing and then plastering the walls and ceilings, which means the fitout is half complete. Kate chose a mixture of mainly plasterboard for the walls and ceilings and Structaflor that she had left over from another build. She used the Structaflor for the cladding of the internal walls in the living area. This was both cost effective and worked with the aesthetic of Kate's interior. For the floor finish Kate decided on a water-based epoxy floor finish in a charcoal grey colour, similar to polished concrete but more cost effective.

The Kitchen Fitout

Kate had one of her luckiest finds when visiting Red Ned’s Salvage and Secondhand Yard at South Tweed Heads. She found a secondhand kitchen, which was exactly what she had envisaged in her original kitchen plan. It had stone benchtops and appliances included. Kate paid a small deposit to Red Ned’s and took all the measurements and photos of the kitchen, then worked with her builder Ian Godwin to see if the dimensions would work in the space planned for the kitchen.

The appliances that were included were:

- Smeg 900mm gas cooktop
- 900mm electric fan-forced oven
- overhead exhaust fan
- Smeg microwave
- Asko dishwasher
- stainless-steel sink and mixer tap

It took a bit of wrangling to make the kitchen fit in the space. This was because the configuration of the kitchen included an island bench containing the sink, dishwasher and drawers on either side. This was transferred to be put against the wall with the large

window, allowing Kate to look out to the trees. The main section of the Red Ned’s kitchen with the cooktop and oven with overhead cupboards was able to fit against the wall already built. In the end the only thing that was added was a corner cupboard to join the two sections. Kate was also able to create a butler’s pantry out of the extra full-length cupboards.

The final touch for the kitchen is Kate’s island bench, which has two sets of drawers; the benchtop was made using timber from an old bridge she found at AJ Magnay’s.

The final cost for the kitchen was approximately \$7,000.



Let’s play ~ the interior design



What is marvellous about using a shed as the bones of a home is that it dramatically cuts your costs. And as you can see, when finished it does not look like a shed, it looks like a stylish contemporary home. ‘I mean it is marvellous, don’t you think?’ says Kate. ‘You can build and fit out a large 3-bedroom 2-bathroom home for around \$250,000. ‘I’ve done smaller shed homes from around \$165,000,’ says Kate. These prices are based on using secondhand materials as much as possible, which is a significant cost saving and creates a unique look.

As you can see from the photos Kate has an eye for decorating as well. Way back in the planning stage she had made sure that her main pieces of furniture would be able to be accommodated in the space. As you can see certain pieces have the space to breathe and then some pieces are clustered to create a cosy space within a space.

The most rewarding thing to come of this latest adventure for Kate is that she has launched her consultancy business called The Shedaholic for those wanting to build a shed home. Kate offers different levels of service depending on the experience of her clients.

Kate says, ‘I am a self-confessed Shedaholic, who has been building and creating shed homes for the last eight years. Each of these homes has its own simple and creative style.

‘I know all there is to know about the processes of building a shed into a beautiful home and offer all levels of support from simple consultancy packages to help in planning a shed design and a floorplan to packages that cover all aspects of The Shed build including style and planning, construction, fitout and interior design. A step-by-step walkthrough from go to whoa!’

Kate certainly has an eye for design, captured here in local photographer Kate Holmes’s stunning images of the first section of the home. The second stage will be commencing shortly. We’ll keep you posted.



Photos of the completed shed by Kate Holmes

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So little, but so much waste: tackling the nappy nightmare

Five-point-six million disposable nappies are used in Australia every day. That is two billion nappies going into landfill each year. With 95 per cent of parents using disposable nappies, it may be time for a culture shift back to reusable nappies.

Jannine Barron

Byron Shire residents have been the lighthouse for eliminating single-use plastic bags and straws, but plastic-bag waste is a minor issue for tips when compared to the issue of disposable nappies and associated disposable products that our councils deal with daily.

Even those apparently eco-disposable nappies you can buy end up in landfill. Byron Shire Council explicitly states on their website that 'All disposable nappies and wipes including compostable should go in your red bin'.

Disposable nappies are such a problem that many councils around Australia are taking up the issue and campaigning to support their own ratepayers to change to reusable nappies.

Locally, Tweed Shire Council encourages parents to consider reusable nappies with statements such as: 'Did

you know that every disposable nappy in landfill takes centuries to break down?'

Lismore Council approved the sale of compostable disposable nappies in 2013 announcing to locals that they could 'go disposable with a clear conscience'.

In the same year, Kiama Council on the NSW south coast ran free cloth-nappy workshops to educate parents about the waste and cost of disposables in a bid to reduce disposable-nappy landfill. On their website, they write: 'gone are the days of soaking, folding and pins; modern cloth nappies have elasticised sides, waterproof layers, press studs or Velcro and do not need soaking'.

The QLD Sunshine Coast Council has its own nappy library so residents can trial cloth-nappy styles before they buy. Campbelltown Council in South Australia subsidised a cloth-nappy trial for residents.



There is at least one local council in Australia that really goes the extra mile when it comes to supporting cloth-nappy education. The city of Casey in Victoria gives ratepayers a rebate for using cloth. A reward for not clogging up the local tip.

Casey Council also hold an annual expo of local cloth-nappy and other eco-businesses to educate ratepayers about the importance of

limiting waste through the products we buy.

So who is behind the resurgence in cloth-nappy use and waste awareness of disposables in Australia?

Time for a study

In 2014, the Australian Nappy Association (ANA) was launched by some passionate eco-business women to unify and grow the cloth-nappy industry. It came on

the back of two landmark studies on the environmental impact of disposable and cloth nappies: one in 2008 by the UK Environmental Protection Agency and one in 2009 by the QLD university School of Engineering.

The QLD University conclusions were drawn from a study over a four-year period that concluded: 'Home-washed reusable nappies washed in cold water in a front-loading washing machine and line dried were found to use less energy and land resources, comparable water resources, and produce similar or lower quantities of solid waste, compared to the other nappy systems.'

Financial drain

Disposable nappies are also a huge financial drain for parents with the average cost of using disposable nappies and wipes per child in Australia running at \$5,000. This shocking cost for some parents is by far a greater drain on them than the extra few minutes it takes per day to use cloth nappies.

Despite the studies and the huge waste issue that disposable nappies present

to us, the biggest barrier remains the resistance of parents to trying cloth nappies. The belief that they are more work, harder to use and a drain on time-poor parents still trumps any other nappy facts. The topic is so sensitive that it joins religion and politics to be avoided at the family dinner table.

Parents who use cloth nappies are usually passionate advocates. They find them fun and easy to use, and love the feeling of parenting in an eco-friendly way.

You change nappies eight to fourteen times a day for a newborn and six to ten times a day as they grow older. Good research into options and costs will give you a lot of satisfaction and potentially save you up to \$5,000 per child.

One of the main obstacles is getting support when you have problems using cloth nappies. If you don't have family and friends around to provide advice check out tips online or find out about local nappy workshops.

• Jannine Barron owns Nature's Child and is a member of the Australian Nappy Association.

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#WhoMadeYourClothes: Sustainable fashion, the time is now

Hilary Cornell

What is fashion to you? Is it about constantly being able to show off something new? Perhaps it is about style or elegance? Or maybe you just don't give a damn... Whatever fashion may be to you in today's society there isn't a lot of room for the loincloth or figleaf of yesteryear.

Clothes are not only a necessity but they can also be an important aspect of self-expression, yet the way clothes are made and used today is extremely damaging to the planet.

Climate change impacts and knowledge of third-world working conditions are leading to an increasing awareness around sustainable and ethical practices; 'sustainable fashion' has become a global movement. It has changed what we see on some store shelves and what hits the fashion runways.

For some brands, such as Patagonia, the focus on sustainability has always been their core value; however, increased consumer awareness around sustainable practices and fair trade has led to high-end brands such as Stella Mc-

Cartney and Gucci jumping on board.

Sustainable Fashion has been written about in *Vogue* and *Forbes* as well as earning its own hashtag on social media, #WhoMadeYourClothes. While positive steps have been made toward a new fashion economy based on sustainable practices, there is still a long way to go.

Fashion waste

Retailers such as Kmart, Target and Primark (UK) churn out billions of cheap 'fast fashion' pieces each season.

The fact that market research company AYTM's findings that 22 per cent of people ranked price as an important factor when considering clothing purchases explains why the waste caused by fast fashion has become a significant environmental problem.

Only about two million tonnes – 15.3 per cent – of clothes are recovered for recycling annually in the US, as opposed to 45.9 million tonnes of paper products. The Environmental Protection Agency (EPA) has said that clothing recycling today has an equivalent impact of



Protesters hold signs reading 'Human before clothes' in a march during the Fashion Revolution Week in Paris on the fifth anniversary of one of the world's worst industrial disasters, when the Rana Plaza textile factory complex collapsed and killed at least 1,130 people in Bangladesh. AAP Image/CrowdSpark/Dan Pier

removing one million cars from US roads.

Imagine the impact on the environment if we recycled even 50 per cent of clothes?

Initiatives

The Baptist World Aid's Ethical Fashion Guide (BWAEEG) and the Ellen MacArthur Foundation's Circular Fibres Initiative are both key resources for people who want to make sustainable fashion choices.

The BWAEEG grades fashion brands on their sustainable and ethical practices and the Circular Fibres Initiative's aim is to stimulate the level of collaboration and innovation necessary to create a new textiles economy, bringing together leaders from across the fashion industry.

Nisha Abey, owner of local Byron brand Liar the Label, is passionate about sustainable and ethical fashion and

reminds people that 'It's not possible for a T-shirt to retail for \$3 and be sustainable'.

Liar the Label sources the best ethical fabrics such as Italian Bi-Stretch recycled polyester (from plastic-bottle waste) for their swimwear range. They design so their pieces can be worn for years.

Nisha says they manufacture in Australia because it is easier to audit a factory here and she knows minimum

wages have to be paid.

Helen O'Carroll, who has been in the fashion industry for the long term and now owns the sustainable fashion store Bay Active in the Byron Arts and Industry Estate, has a similar outlook.

'As consumers we need to start taking responsibility,' says O'carroll in reference to knowing where our clothes are made.

She says that there is a need for fashion brands to be transparent to make it easy for consumers to make ethical and sustainable choices.

'We need to ask who made our clothes and then fast-fashion brands will have to stop hiding it.'

Buying good quality clothes, from labels that have sustainable and ethical credentials, and then mending them when the zip breaks, or button falls off, or hem comes down is a far better result for the planet than buying cheap clothes and tossing them when they show signs of wear.

The health of the planet is in a critical state and we all have a responsibility to make choices that heal rather than harm the earth.



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Plastic: love it or loathe it – it's here to stay...

Aslan Shand

Earlier this month India committed to eliminating all single-use plastics by 2022; in 2016 France passed a law to ensure that all plastic cups, cutlery and plates will be replaced with biodegradable materials by 2020; and in Australia we still have no national policy in relation to single-use plastics.

Fortunately we have some active people on the ground who have been campaigning to reduce the use of plastic, especially single-use plastics, and now all states and territories in Australia, except NSW, are phasing out single-use plastics. Though the prize goes to Coles Bay in Tasmania, who banned single-use plastic bags in 2003.

What's so bad about plastic?

To start with, plastic bags and bottles often end up in our waterways and oceans killing and damaging wildlife – such as whales with so much plastic in their stomachs they die of starvation.

It is estimated that be-

tween 1.15 and 2.41 million tonnes of plastic enter the ocean each year. In the North Pacific Ocean there is the Great Pacific Garbage Patch (GPGP), the largest of five offshore plastic-accumulation zones. According to Ocean Cleanup Foundation the GPGP is estimated to be three times the size of France.

The fact is that plastics never completely break down – even when you can't see them these 'micro-plastics' (anything smaller than 5mm is known as micro-plastic) are still there affecting your health, leaching chemicals and poisons into your environment, and entering the food chain.

Plastic elimination

While both NSW and the federal government continue to refuse to lead on the issue of reducing plastic (let alone climate change!) there has been plenty of action on the ground in the Byron Shire.

MullumCares started the annual Plastic Free July locally and supported Mullumbimby's IGA supermarket to stop using single-use plastic bags in 2016.



Shearwater Steiner School student Oceana Pearl entered the Western Australian wearable arts show in Mandurah. Her wearable art work, *Morphett'e*, was awarded first place in the under-18 section. The winning piece was made from hundreds of plastic bags, which were sewn and sculpted into the piece.

Plastic Free Boy, Arlian, has been taking his film *Plastic Alarm* into schools from here to Brisbane and it is also being shown in schools in Europe and the US.

Arlian has appeared on screen with Dirt Girl and on Channel 10's *The Project* as he works to spread the message about plastic and help people find alternatives.

Plastic free Byron

The most recent initiative has been the launch of Plastic Free Byron, a website designed to encourage local food, beverage, and fashion businesses to reduce their plastic waste.

Funded by Santos Organics, Plastic Free Byron (www.plasticfreebyron.com) have developed a directory of

businesses that have been given a rating on how plastic free they are.

'For Plastic Free July, we are encouraging businesses to take 31 actions in 31 days to reduce plastic,' said Santos's communications manager Paul Crebar.

Paul highlighted that the community can also add businesses to the directory that they think are doing a

good job of reducing plastics or those that need some extra encouragement to go plastic free.

'The community can send messages of encouragement to the businesses listed in the directories through a link to the businesses' social-media platforms.

'It is a way to celebrate and congratulate businesses who are reducing their plastic use,' said Paul.

Bunting love

Another project being kicked off for Plastic Free July 2018 is all about a little 'bunting love'.

That's right – instead of using balloons you are being encouraged to use bunting to jazz up your celebrations. MullumCares is running workshops throughout July to show locals how easy it is to get on board.

'We will be running bunting-making sessions to teach people how to make it themselves and we will build a stock for the MullumCares Library of Stuff so the community can borrow it for events,' said MullumCares founder Sasha Mainsbridge.

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Biochar: carbon sequestration in action

Don Coyne

Biochar is short for biological charcoal and is made with the intention to condition your soil, filter your water, feed to your animals or build an eco home.

Biochar is created when you heat biomass in limited oxygen, also known as pyrolysis or gasification. A quality biochar has a very high carbon content (usually 80 per cent if the feedstock is wood), an immaculate surface area between 300 and 500m²/gram, is electromagnetically charged (organic content sticks to its surface) and it won't decompose for up to thousands of years. It is therefore a powerful economic, social and environmental tool now and into the long-term future.

Slow release

Biochar holds on to excess nitrogen, releasing it as a slow-release fertiliser to commercial crops or home-grown food and forests, which translates into financial and environmental savings.

Usually most of the



Biochar can be made with a numerous of materials that will produce a range of different quality biochars.

nitrogen, particularly synthetic fertilisers and animal manures, pollutes the atmosphere and waterways before it can be taken up by the plant.

NSW DPI senior research scientist Dr Lukas Van Zwi-eten said soils naturally turn over about ten times more greenhouse gas on a global scale than the burning of fossil fuels with nitrous oxide and methane being 30 and 300 times more potent than CO₂ respectively.

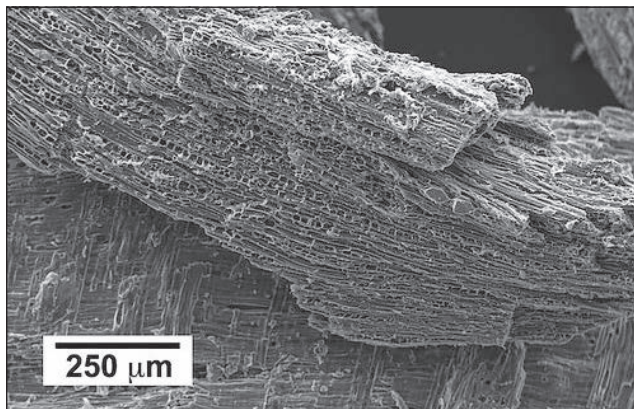
Biochar reduces the release of these greenhouse gases; they soak into its micropores and cling to its magnetic surface. It is therefore great to use in compost

toilets and chook pens to reduce ammonia and odours.

Use with livestock

By feeding biochar to cows whose dung was then buried by dung beetles, a farmer in southwest WA not only re-engineered his soils but had more productive livestock, a higher percentage of legumes in his pastures, and reduced runoff.

Energy is lost to the atmosphere when cows burp and fart, ie it is released as methane emissions. Instead of that the charcoal that is fed to livestock binds it up and the energy is converted into meat production. Biochar is also a fibre, which can replace



A macro-shot of biochar being used as part of a water-filtration system.

hay, an expensive input.

Phosphorous fertilisers can also be replaced using this method. The biochar, activated in the gut of the animal, is deposited on the ground as dung and dung beetles bury it – then their larvae ingest and excrete it. This creates improved biochar mineral complex at depth.

In February this year, biochar was added to the methodology for building soil carbon as part of the carbon farming initiative. You can now register a biochar project under the scheme and be paid for carrying out ecosystem services. When compost and mulch are broken down by the microbes the released

carbon accumulates in biochar's micropores. NSW DPI results at Wollongbar indicated a 20 per cent addition to soil carbon over ten years. The initial biochar added was 80 per cent carbon and has not decomposed.

Energy

Pyrolysis and gasification are also forms of renewable energy so by carbonising underutilised biomass instead of taking it to landfill or burning it to ash it can be converted to syngas, a clean-burning gas that can attract renewable-energy credits.


The smoke can also be cooled and condensed in a pipe; the smoke is mainly

water but has an active constituent of acetic acid and 200 natural compounds and comes out as a liquid known as a wood vinegar or pyrolygneous acid. This is a bio-stimulant and builds resilience to pest and disease. It has fungicidal qualities and can improve seed germination. Locally it is used to reduce husk spot in macadamias and Panama disease in bananas.

Biochar Conference

The second Australia New Zealand Biochar Conference coming up on the Gold Coast on 14, 15 and 16 August will feature a Mt Gambier project where a herb grower with four acres of glasshouses will convert sustainable forestry residues into syngas, CO₂ and heat to grow the herbs and create approximately 2,500 tonnes of biochar per annum. The biochar will be value added, by the same company that supplied the waste, into useful bio-products. For more info on ANZBC18 visit anzbc.org.au.

• Don Coyne is owner/operator of Byron Biochar.



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The past: a guide for sustainable farming

The main technology for the organisation of country is and was knowledge. Knowledge is country specific.
– Deborah B Rose (1996)

Dr Mary Gardner

The 10–20-kilometre strip of coastline where we of the east coast subtropics live only stabilised about 10,000 years ago. Here in Byron Bay, this made an island of Nguthungulli (Julian Rocks) and a mighty wetland and coastal forest complex from Tyagarah to Broken Head. The rising sea levels moved Aboriginal people inland. What did they know and how did they live here? Surely such skills and knowledge would be at the heart of the current quest for sustainability. Aboriginal place names most often explain something about the place. Fresh waters meet coastal marine waters here in Cavanbah, the ‘meeting place’. The sea entrances to waterways such as the Belongil and Tallow would close with sand. The



Local wetlands were proactively managed by Indigenous Australian's prior to European settlement. Right: Turtle tucker in the Butler Street drain in Byron Bay.



wetlands and forest behind would ripen with fresh rainwater coming down from the ridgelines back towards St Helena. Much freshwater also rose from the many springs underground. There is a local legend about a map of these various springs that was made in the 1950s. What a find this would be if a copy could be located.

Abundant wildlife

All these waterplaces were abundant with wildlife. Aboriginal management was proactive and worked to enhance conditions for

wildlife. They knew the needs and habits of creatures and organised the waterscapes to accommodate them. People knew where to go to collect food when they needed it. Acting on their knowledge of drought cycles, Aboriginal people built weirs, dams, tanks and channels of all sizes and shapes to hold water and direct it across the landscape. Into these waters, they distributed fish and other aquatic animals. Aboriginal aquaculture practices included managing eels and shepherding mullet and other fish into holding areas. They built fish-holding

pens and traps in freshwater as well as along the coast. They sorted fish by size and sex. They took what was needed, knowing where more could be found later.

Legend

Coastal dolphins helped. Legend has it that after the death of a revered Bundjalung man, he became a dolphin. He used his knowledge of hunting with dingoes to help the other dolphins understand how to fish with the people on the shore. Alternating hot fire with cold water, some fishing

holes were constructed in large intertidal rocky reefs. Other pools were built with boulders. Fish liked these new habitats. Women collected their next meal by dropping in their baskets during one tide and returning for them at the next. An easy way to fish. This micromanagement of wetlands and coastal places benefited populations of turtles, coastal birds and platypus. Patches of wild rice, edible and useful rushes and reeds were expanded. Freshwater mussels and clams, saltwater pipi and oysters, including burrowing clams,

were moved from place to place. This helped the different species spread throughout aquatic habitats.

Australian cuisine

International gourmet circles are raving about ‘Australian cuisine’, based on ‘bush tucker’. At the heart of sustainability in Byron Bay should be a collective effort to convert the proposed West Byron mega-development into a network of working rehabilitated wetlands. Caring for waterplaces would transform the present as well as provide for the future.



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Re-shaping business: innovation and sustainability key

Todd Sotheren

What's really going on in this Shire right now? This message is tempered with a curious sense of awe and wonder of the incredible creative energy that seems ignited around us right now.

When passion is the driving force behind your business anything is possible. So many of our local heroes have burst through the boundaries imposed by traditional business and broken through the parameters of outdated beliefs; to achieve unprecedented success in the startup space.

We're talking about the region's iconic innovators, the Stone & Woods, the Spells, the Flow Hives, the Brook-farms... the list goes on.

These brands are well known and well loved locally. But it's this next generation of early-stage startup businesses (often coming up under the very wings of their forerunners) that has me truly inspired; those folks who are out there every day, pouring their heart and soul into their business. And I'll tell you why it's so inspiring – because it's bloody hard work!

Before you start out, you could never begin to imagine how much hard work, dedication and perseverance it will take to make your entrepreneurial dream come true, at least not until you're neck deep in it and swimming upstream.

Around these parts, we've come to refer to these dedicated creative visionaries as the 'hustlers' – 'cause that's what you've gotta' do to make it – especially here in Byron Shire.

I find the plight itself one of the most amazing aspects of the whole situation – that all this is happening, here in Byron, against the odds – even in spite of the existence of an acute housing-affordability crisis.

For this reason alone, we know it would be a lot easier to just go set up shop somewhere else, somewhere easier. So then we come to wonder: why exactly is it happening here, this battle against the odds?

I've thought about this question a lot and I can really only sum it up as being 'the vibe'. Yep – the vibe.

Culturally, there is no other place in the country



The Flow Hive is one of many local innovation success stories.

When passion is the driving force behind your business anything is possible

like Byron Shire – we proudly own our out-of-the-box 'Think Different' mentality. In fact, while I'm ripping off slogans from Apple, can I tell you that this 'thing in the air', this atmosphere here in Byron right now – it reminds me a whole lot of what I've read about California in the 70s.

Let me give you some insight. Around the beginning of that decade, almost 50 years ago... off the back of the work of visionaries such as Buckminster Fuller people began to gather in California. Drawn together by this amazing thing called *The Whole Earth Catalogue* – cre-

ated by Stuart Brand.

It was rather like the internet, before the internet – look it up... on the internet.

Among other things, the group would passionately explore permaculture, alternative/sustainable fuel sources and renewable energy. Sound in any way familiar?

Perhaps so. Anyway, some of the crew began to tinker with computer electronics and motherboards and what not, then out of this curious tinkering emerged the Apple Computer. Talk about 'think different'...

Who could have imagined that a group getting togeth-

er to talk about permaculture would create the cutting-edge innovative technology company we know today.

My point is, I feel the swell – that same unprecedented pregnancy of possibility, right here, right now.

There are just so many incredibly intelligent people, both intellectually [IQ] and emotionally [EQ], gathered and continuing to gather in our community.

They're out there, every day, undertaking projects, conducting research and experimenting with new ideas. They're tackling limited thinking and questioning all assumptions – generating solutions of the highest order; around large-scale, global topics such as sustainability, circular economy, conscious capitalism, the future of work and money, and they're striving for balance – developing completely new models for an economy that a new, conscious society will be founded upon.

These global solutions are being prototyped here, right under our noses.

This is why, in my mind, it is important to focus on providing a nurturing environment that has the capacity to

support the coming of age of this, our new economy.

It's not only the promise of much-needed next-generation jobs – which will enable our kids to thrive while remaining in our community. It's about continuing to develop a model that allows us to further build upon our region's (already strong) global identity and reputation as being bold enough to buck the trend, daring enough to not only think differently but *behave* differently; for our ability to incubate the ideas of the innovators, and for our fearlessness in endorsing those brave enough to become the disruptors.

There is, I believe, a responsibility, a certain obligation that we must recognise: that we're not only in a position to create the foundations of a thriving, sustainable and economically viable future economy for our region but also, through our modelling, we have the potential to influence and create significant global change in shaping the new economy.

• Todd is the president of the Byron Bay Chamber of Commerce.



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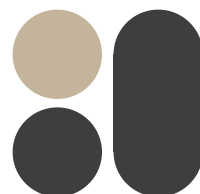
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Enova and COREM power on with renewables

Soaring energy prices, the impact of climate change and the need for local resilience in relation to energy production are changing the way both business and residential consumers are thinking about how they buy and consume electricity. Enova Energy and COREM are two local companies who are taking up the challenge of re-thinking how electricity is both produced and distributed in the northern rivers region and beyond. Now they are asking you, their local community to get on board.

Enova

Enova Community Energy is a local company that made history when it was established in 2016 as Australia's first community-owned renewable-energy retailer.

The company's vision has always been to champion the reduction of greenhouse emissions by making renewable energy more accessible and affordable.

Enova managing director Tony Pfeiffer says: 'Eventually, the aim is for the northern rivers region to be completely self-sufficient in terms of its energy power generation, supply and distribution.'

'Many locals are already generating solar energy and the growth potential for more local renewable energy is huge. Solar is so easily generated in Australia – we are one of the sunniest countries in the world – and, as a renewable resource, solar is better for the planet.'

Regional generation, supply and distribution models such as the one Enova is pursuing are not new – they are working in many places overseas as countries tackle their emissions targets. But what sets Enova apart is that it is also a social enterprise.

Social enterprise

Enova Community is the not-for-profit arm of Enova Community Energy and 50 per cent of dividends are reinvested back into the community.

Enova Community's vision is for everyone to be able to access renewable energy and use it in the most efficient way. It does this by educating and advocating for energy efficiency, helping those who can't afford renewables, and engaging in numerous partnerships and projects.

Recently Enova partnered with North Coast Community Housing (NCHH) and the Office of Environment and Heritage (OEH) to help tenants across the northern riv-

ers receive free solar panels and home-energy audits as part of a new solar-housing project.

Solar panels were installed at 28 houses and, combined with the energy-saving measures initiated through the educational audits, tenants' bills are expected to fall by around \$420 a year.

Enova also has a community-gardens project that will aim to build solar systems and offer memberships in the solar gardens to customers who are not able to have solar panels of their own. It's ideal for people who are renting, living in apartments, or in houses that are shaded, or who are not able to afford to invest in a whole system.

The solar gardens will be managed and maintained by Enova, with members receiving a solar credit on their Enova electricity bill.

Northern rivers businesses and individuals are being urged to become members and can register their interest at <https://enovaenergy.com.au/solar-garden/>.

In another project, Enova is working with Community-Owned Renewable Energy Mullumbimby (COREM) and Zero Emissions Byron (ZEB) to Repower Byron – encouraging locals, on a street by street basis, to meet the Shire's objective of zero emissions by 2025.

'In my experience, people want to do something – about spiralling energy costs, and want to move away from traditional fossil fuels, which we know contribute to climate change,' Tony said.

'So when Enova says: "Power to the People" it means we want to give people choice, and affordable access to a variety of energy options. We want to empower people to take control.'

Now is a great time to join Enova, or refer a friend. You could win \$1,000 worth of electricity. For more, visit: www.enovaenergy.com.au/power-to-the-people.



The team behind the Repower Byron Shire project, from left: Dave Rawlins (COREM), Kamala Rose (COREM), Sandi Middleton (Enova Community), Tiffany Harrison (Zero Emissions Byron) and Ella Rose (COREM).

COREM

COREM (Community-Owned Renewable Energy Mullumbimby) was established in response to the threat of coal seam gas development in the northern rivers. It is a volunteer, not-for-profit group that launched in 2014 fuelled with the inspiration and passion harnessed from the Bentley blockade win and the determined efforts of our community to create a gasfield-free region.

Community-owned renewable energy is not just about climate action. With nearly 50 per cent of NSW's carbon pollution coming from the electricity sector, de-carbonising the grid is essential for a safer climate.

COREM also aims to create a clean-energy future that ensures we have electricity that is affordable and a sector that brings economic benefits to our region.

'The transition to renewable energy is inevitable. However, this could take decades if left to the politicians and vested interests of the fossil fuel industry,' says Dave Rawlins, COREM vice-president.

'We see COREM's role as ensuring this transition comes much faster and fairer than it otherwise would.'

Community Energy Fund

The benefits of community-owned energy can be seen in COREM's Revolving Community Energy Fund. To date this project has installed 33kW of solar PV on four sites. COREM lends funds

interest free to community groups to install solar PV. It is estimated the current installations will save \$365,000 for these groups' on their electricity bills over 20 years!

'This money stays in our community and will circulate through the local economy rather than pay power bills,' said Rob Passey, COREM's treasurer.

COREM is about to fund another three solar PV projects at Federal Hall, Mullumbimby Commons, and Lightn UP in Lismore, that was affected by last year's flood.

Action now

Unlike most politicians, COREM believes we need decisive action on climate right now. That's why they are determined to run the 2482 area on community-owned renewable energy by 2020. The local generation of renewable energy will come from several sources.

Early visionaries knew of the importance of local community-owned energy and created Mullumbimby's Lavertys Gap Hydroelectric station in 1926. It was the fourth hydro site built in NSW and the fifth in Australia and is now historically listed.

The NSW government Department of Environment and Planning have funded COREM to undertake a pre-feasibility study to determine if we can bring the hydro project back to life.

COREM's president Ella Rose Goninan attended a two-day workshop in the Shoalhaven, to devise and deliver a community-owned social-access solar garden in the Byron Shire.



Francesca and Isabella Adami at COREM's RenewFest. Isabella, who made her crown herself loves dancing and is always singing about saving dolphins and whales from ocean plastic.

The aim is to create an innovative way to access solar energy for those currently locked out of the market, ie people renting and people with shady roofs.

This workshop forms part of the nationwide Social Access Solar Gardens project led by Community Power Agency and the UTS's Institute for Sustainable Futures and funded by Australian Renewable Energy Agency and the NSW Government under the NSW Renewable Energy Action Plan. More details will be shared in the coming months as the design progresses.

The Repower Byron Shire campaign has been developed as the easiest and most effectual way everybody in the community can be involved in creating an afford-

able clean energy future; the three steps everybody can take are to Switch, Reduce and Produce.

Switching to an ethical electricity retailer drives climate action, being conscious of energy use saves money and installing solar panels makes money over time.

The most urgent step is we must divest from electricity retailers that fund coal and gas. There are alternatives, including locally owned Enova Energy, that cost no more money.

As was seen recently at Renewfest, a COREM-hosted event, the Byron Shire is at an exciting moment of our history where we have the opportunity to carve out our own stake in the electricity sector.

Big Scrub RAINFOREST DAY

20TH ANNUAL

WHAT IS THE BIG SCRUB RAINFOREST

The Big Scrub was once the largest expanse of subtropical rainforest in Australia and covered a roughly circular area of 75,000 hectares where presently Lismore, Ballina, Byron Bay and Mullumbimby are situated. Today, less than 1% of the original Big Scrub remains. These fragmented pockets of subtropical rainforests are special places. More species of plants and animals are found here than in any other ecosystem in NSW.

HISTORY OF THE EVENT

The Big Scrub Rainforest Day was the 1999 brainchild of Tony Parkes and Kelvin Davies. Tony was (and still is) the President of Big Scrub Landcare. He and Kelvin decided that they should put on an event that would be a celebration of the Big Scrub and would enhance the community's awareness of the local Big Scrub Rainforest, its beauty, its rich biodiversity, its tragic history and the need for the community to take the lead in restoration.

A few hundred people attended the first event held at Booyong Recreation Reserve and the event has grown into Australia's largest annual Landcare, environment and community celebration providing a focus for community involvement through education in a festival environment.

In 2001 the event found its spiritual home at Rocky Creek Dam (the source of our regional water supply) where Rous County Council has been conducting pioneering restoration of lowland subtropical rainforest for over 30 years. The event has since been presented by Big Scrub Landcare in association with Rous County Council.

2018 BIG SCRUB RAINFOREST DAY

Expressions of interest are welcome from businesses, organisations and individuals that want to be part of the 20th annual Big Scrub Rainforest Day on Sunday 21st October 2018 at Rocky Creek Dam. The program features guided bird and rainforest walks, talks and workshops from some of Australia's leading ecologists, bush regenerators, naturalists and scientists. Some of the featured speakers for the 2018 event include Professor Ian Lowe and Professor Lesley Hughes plus many more. There will be the usual food, entertainment, stalls and environmental activities for the whole family.

The 2018 event is presented by the Big Scrub Landcare in association with Rous County Council with the assistance of local and regional community organisations and individuals. It has wide support from many Landcare groups, local government, local businesses and state government agencies.

To find out more email info@bigscrubrainforest.org or go to www.bigscrubrainforest.org

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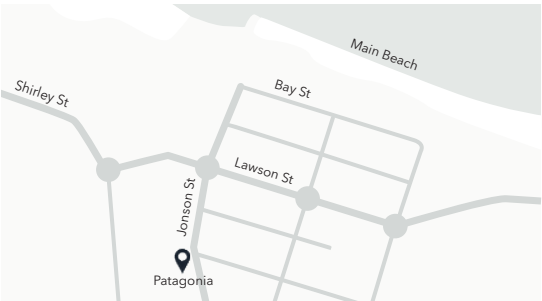
Further Information available at www.bigscrubrainforest.org



Dave Rastovich. Photo: Ryan Kenny © 2018 Patagonia, Inc.

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