

# FUTURELANDS 2

AN INITIATIVE OF THE KANDOS SCHOOL OF CULTURAL ADAPTATION



***Futurelands2* took place in November 2016 in Kandos, NSW. People from across Australia listened, talked, mingled and dined between the Kandos Community Hall, Marloo Farm and the extraordinary pagodas of Ganguddy/Dunns Swamp in the Wollemi National Park. Innovative farmers, Indigenous historians and land custodians, soil scientists, economists, writers and artists explored emerging practices in farming, land care, food and energy production and inspired new conversations about human relationships with land.**

*Futurelands2* was staged by the Kandos School of Cultural Adaptation (KSCA). It was proudly hosted by CEMENTA Inc, in partnership with the Material Ecologies Research Network (MECO) at University of Wollongong and the Space, Place and Country research cluster from Sydney College of the Arts, University of Sydney. The public forum was convened by Laura Fisher, and co-organised by the members of KSCA, including Diego Bonetto, Ann Finegan, Gilbert Grace, Alex Wisser, Lucas Ihlein, Christine McMillan, Georgie Pollard and Ian Milliss.



This publication is launched as part of the 2017 CEMENTA Festival in Kandos. The newspaper collects together experiences from *Futurelands2* so that they can be shared far and wide, sparking connections and generating new ideas for collaborative cultural adaptation.

## CONTENTS

<b>Welcome to Kandos</b>	04
Ian Milliss and Gilbert Grace	
<b>Futurelands2: On Cultural Adaptation</b>	06
Alex Wisser	
<b>Introducing Futurelands</b>	08
Ann Finegan	
<b>Sow the Seed: Aboriginal Agriculture</b>	10
Bruce Pascoe	
<b>Natural Sequence Farming</b>	12
Stuart Andrews	
<b>Reading the Landscape</b>	14
Jill Moore-Kashima	
<b>Disruptive Entrepreneurship</b>	16
Adam Blakester	
<b>Transforming Economies through Care-Full Farming Practices</b>	18
Gerda Roelvink	
<b>Sunflowers as Agricultural and Cultural Change Agents</b>	20
Lucas Ihlein and Simon Mattsson	
<b>The Dungog Festival Shines the Light on a Regional Town</b>	22
Tracy Norman	
<b>Listen to the Land</b>	24
Haydn Washington	
<b>We Stand With Standing Rock</b>	26
KSCA and friends	
<b>Foragers' Feast</b>	28
Diego Bonetto	
<b>The Hemp Initiative</b>	31
Gilbert Grace - with thanks to Klara Marosszeczy	
<b>How Hemp Has Been Written Out of History</b>	32
Gilbert Grace	
<b>Aboriginal Culture and Burning</b>	34
Larry Towney and Michelle Hines	
<b>Creation and Action</b>	36
Jason Tuckwell	
<b>Purple Copper Butterfly</b>	37
Ceane Towers	
<b>Travelling Stock Routes</b>	38
Genevieve Murray, Kevin Williams, Lyn Syme and Joni Taylor	
<b>Crudine Ridge Wind Farm</b>	40
Mark Branson	
<b>What the Hell are You Doing?</b>	42
Artist as Family	
<b>Blackberries</b>	45
Kirsten Bradley - Milkwood Permaculture	
<b>What About Willows?</b>	46
Various Authors	
<b>Contributors</b>	49
<b>Publication details and acknowledgements</b>	52

## ACKNOWLEDGEMENT OF COUNTRY

*Futurelands2* took place in Wiradjuri country. We were very fortunate to be able to stage part of the forum at Ganguddy, a significant place for Wiradjuri people.

Ganguddy's cultural significance was in the minds of all of those who took part in the conversations we had in that special place, and the organisers wish to thank the traditional owners of this region for hosting us on their land.

We pay our respects to elders past, present and future.





# WELCOME TO KANDOS

*Ian Milliss and Gilbert Grace*

## IAN MILLISS

I think it's true to say that *Cemental3* was born of an optimistic belief that the active attention of artists could somehow change the future of Kandos for the better.

I have to confess that when I was approached in 2012 to participate I did not share that optimism entirely. I had known Kandos my entire life, much of my childhood had been spent at Blackmans Flat just down the Castlereagh Highway, my family for several generations had lived in the other cement town, Portland, and my first years of school had been at Wallerawang where I had since returned to live in 2002. I knew the area, its history and its social and political difficulties like the back of my hand.

One of my many reasons for returning there was a belief that in fighting against catastrophic climate change you must take some responsibility for developing alternatives for those who are reliant on the polluting industries, on coal mining and coal powered energy production. As someone with deep local roots I had some advantages and over time was appointed to several Lithgow Council committees – the consultative group for the local strategic plan, the Heritage Asset Working Party, the Environment Advisory Committee and the Economic Development Advisory Committee. But in the end after ten years I hadn't managed to get them to mention climate change in even a single policy document, nor to acknowledge that it might be a problem. By 2012 we had decided life was too short to waste like that and were in the process of moving out.

But I had to produce something for *Cemental3* so I created a poster for Kandos that was everything I had argued for in Lithgow. I imagined a resilient forward-looking town that had turned its problems into opportunities. In the centre of it was the idea of a School of Cultural Adaptation, in my mind a virtual organisation with no management and no program beyond modelling future possibilities but one that even in its name could point to a way out of looming disaster.

The poster was a success at the time and although the whole idea of cultural adaptation had been a life-long theme I didn't think any more of it until Gilbert Grace raised the idea of pursuing a different element of the poster, the manufacture of a plywood bicycle, and promoting it as a project

of the Kandos School of Cultural Adaptation. This idea almost immediately evolved into growing a hemp crop to provide hemp rope, a necessary bike component, and since then it has rapidly developed into a diverse range of projects driven by a close but loose group of like-minded individuals.

The rapid diversification has been a perfect example of cultural evolution in action, as projects adapt and branch out according to the resources available and the restrictions that apply. It may have begun as a throwaway one-liner but the KSCA looks like it has a real future.

**Welcome**  
to  
**KANDOS**

When the cement works closed in 1999 everyone thought Kandos was finished.

In fact it wasn't a disaster at all, it was just the beginning of a new era as the town has reinvented itself as the liveliest country town in Australia.

Working with local and international artists the Kandos community has become a hub of creative industry activity as well as a world leader in renewable energy and green industry.

Come with us to a few of the many attractions of the new Kandos and see what imagination and active community involvement can achieve!

**It's our Bicentenary!**

When the first Europeans crossed the Great Divide they travelled up the river valleys that led to the Capertee Valley. They ended their trip here and the camp they set up grew into the city of Kandos.

Join us this year to celebrate the bicentenary of their trip!

**GILBERT GRACE**

Ian Milliss and I were both participants in *Cementa13*. I brought a fleet of Dutch bicycles for people to use as fun and environmentally sensitive transport around Kandos. Ian's poster appeared on telegraph

poles and shop walls around the town and I thought it was a guerrilla event. Only later did I find out that Ian was the author.

I like dreamers, people who can project into the future and see happy places devoid of banksters and pranksters. I could see Ian's poster had a rock-solid basis

despite its parodic tone. I put to Alex Wisser the idea of realizing Ian's poster step by step, under the banner of the Kandos Institute of Sustainable Structures (KISS) as my project for *Cementa17*. The name did not stick but the idea of realising Ian's poster got immediate traction. I selected the

easiest of the individual projects to begin with: a fleet of plywood bicycles for use at *Cementa*.

*The Hemp Initiative* resulted from a project concept Alex had been working on to deepen *Cementa's* connection to its rural location: a land residency in which an artist would become embedded on a local farm and conduct a project over many seasons or years. In the 1990s the frame-builder Craig Calfee perfected the design of modern bamboo bikes, which are held together by hemp and eco-epoxy (plant based epoxy resin). The conjunction of a biological bike and a Kandos farm setting seemed the ideal jumping off point for the land art residency. Hemp suggested a way to address the loss of Kandos' major industry (cement), the idea being that it could be replaced with more benign and forward thinking, ecologically sustainable, decentralised and value-adding industries.

Stuart Andrews took the daring step of hosting this residency on his property Marloo, where he is developing the Natural Sequence Farming Techniques invented by his father Peter Andrews. Stuart and I worked with experienced hemp advocate Klara Marosszaky, Managing Director of Australian Hemp Masonry, and President of the Australian Industrial Hemp Alliance, pursuing the aim of trialling and harvesting a crop of hemp.

While I'm inspired by the idea that you can "grow-your-own" bike, and numerous other 'maker' ready products, Stuart would like to see whether hemp can be integrated into the rehabilitation work he's conducting at Marloo. Hemp is an amazing soil conditioner, and the harvested hemp can be used as a mulch and weed mat to stabilise eroded slopes and deposit nutrients in the denuded soil beneath it. Other nations have looked beyond the restrictive legislative impostures and developed a mature hemp industry. Australia needs to follow suit or be left behind.

To find out more about *The Hemp Initiative*, see page 31.



Ann Finegan, Alex Wisser, Sam Paine and Gilbert Grace at *Futurelands2* with the freshly completed hempcrete wall.

# ***FUTURELANDS 2: ON CULTURAL ADAPTATION***

*Alex Wisser*

In introducing *Futurelands2*, the second public forum on our changing relationship to land, I wanted to give a little context to the conversation we would engage in over the weekend. The story of its inception, like any good story, can be told from any number of perspectives. I thought I would begin from the perspective of an artist, and speak a bit about how and why a group of artists would come to produce a public forum on land. As we hoped, we were able to spend the majority of our time talking about land and only a little bit of the time talking about art. It was important then, I thought,

to introduce art into the frame through which we perceived our subject.

Ann Finegan conceived and organized the first *Futurelands*, which consisted of 15 people sitting around Kandos Projects talking about the impacts of coal on small communities and the environment. *Futurelands2* expanded on this origin, diversifying the program to engage a wide spectrum of perspectives from economists to innovative farmers, Indigenous practitioners, philosophers, soil scientists and regional social entrepreneurs, and included tours of a farming property and

Ganguddy in the Wollemi National Park. This expansion was primarily due to the incredible energy of five artists and two academics (Ann Finegan, Laura Fisher, Ian Milliss, Gilbert Grace, Diego Bonetto, Lucas Ihlein and myself) loosely collected under the banner of a “fictional” educational institution, “The Kandos School of Cultural Adaptation”. This circumstance also meant that the forum would reflect the central focus of concern for our nascent institution: *Cultural Adaptation*.

The term Cultural Adaptation refers to an idea that Ian Milliss has been banging on about for

some decades now – that if art can be seen as an activity that functions specifically to adapt culture to the changing conditions of social reality, then any activity that changes culture can be seen as art. The paradigmatic example, first chosen by Ian, is PA Yeomans, an agricultural innovator who developed radical new ways of farming. In doing so he changed the culture of farming, and more broadly, altered the way we as a society conceptualized and thus interacted with land. This is only one example: the idea of cultural adaptation applies across the span of human endeavour to any



KSCA and Stuart Andrews at Marloo, April 2016.

activity that changes culture, either in particular or in general.

This idea is exciting for an artist. It offers the opportunity for art to leave its white walled reserve and participate in the world, not as rarified intellectual or aesthetic production, but as an embedded cultural practice that can be applied at any point where change manifests itself across the spectrum of human culture. If culture is coextensive with society, and as diverse, plural, and many faced, then why do we assume its transformation is only wrought within the specialized pressure chambers of high art and academia? It seems to me more logical that if culture changes, it changes along all of its articulations, at every level, in every molecule and atom of which it is composed. Should this not be where we apply our attention? And if art has developed over the last 200 years as a specialized activity concerned with changing culture, is there not something that the artist can contribute toward these dispersed points of cultural change? What would it mean to bring the conceptual repertoire, the strategies and methods for shifting perception and challenging convention

developed within the specialized field of art, to bear on points of cultural change outside of it? Is there not also something that art can learn from such encounters?

These questions inform the foundation of KSCA, and to a degree they were gratified at its inception. When I first met with farmer Stuart Andrews and presented the idea that he might partner his Natural Sequence Farming project with a group of artists, he naturally wondered why we would be interested to work with him. It was nearly the first thing out of his mouth. He said up front, “I’m no artist” and I replied that we had approached him precisely because we considered him an artist. He was not long in proving us correct. The work he is engaged in on his property, Marloo, is an activity as essentially creative as anything performed in the studio. His method is experimental and material. Ideas are applied to the land, tested, and evolved. As with art, risk taking and failure are an essential part of the process. But it’s the way that Stuart talks about disseminating the technique and the body of knowledge it generates that reveals his affinity to what is more traditionally known as art.

Stuart thinks about language with the same passion that he thinks about the land. In contrast to the more oppositional approach of his father, Peter Andrews (who invented Natural Sequence Farming), Stuart often considers and works within the given parameters of existing culture, the language and policy landscape of the society he seeks to change. Rather than directly challenging the status quo to an unlikely duel, he works with the existent legal and linguistic landscape to gain approval for his method and demonstrate its value to government regulators, policy makers and other farmers. In other words, he has adapted the principle of Natural Sequence Farming – that of working with the land instead of against it – to the arena of culture, changing the one as he would change the other. If this is not the work of an artist, then I don’t know what the work of an artist is. In a sense, Stuart has anticipated the strategy underpinning our School of Cultural Adaptation, for what else are we doing when we take this existing word artist and stretch it over an object that does not conventionally carry its meaning?

How this concept of cultural

adaptation will develop can only be discovered through its application to specific material and social contexts. *Futurelands2*, as our initial engagement, provided a forum through which artists served as hosts to a diverse range of perspectives on the human relationship to land. One of the successes of the forum was the diversity of voices that we managed to bring into dialogue, some of which were unavoidably in tension with each other. Land care is a contentious field of endeavour with a long history of diverging horizons of concern, each with its own conceptual frame oriented by a particular relationship to land. At this point, it’s only an observation, but it occurred to me that perhaps what we had achieved at *Futurelands2* was a moment of logical diversity, or logos diversity – a diversity of languages that coexisted in a relatively harmonious system of exchange and interdependency. Like all such systems, they include conflict and competition, but are also most healthy or productive when this diversity is held open to the multiform exchanges available to them.

# INTRODUCING *FUTURELANDS*

Ann Finegan

*Futurelands2* was envisaged as a celebration of creative thinking in respect of all things land. Within a whole systems approach, its site visits, field trips and public forum would extend to disrupters in philosophy, economics and energy generation.

Indeed, given *Cementa's* location in a rural environment it was inevitable that an event like *Futurelands2* would emerge. It was also very much a response to place, reflecting the location of rural post-industrial Kandos in the midst of Wiradjuri country and the innovative thinking in the farming communities of mid-western NSW and elsewhere in Australia. Inspired, in part, by a remark by Ian Milliss, that farmers were the world's greatest artists – working with land forms at a grand scale – there were evident synergies with the creative processes of contemporary art.

Indigenous guidance and vision were very important. Lyn Syme, of the local Dabee clan, and her partner, Kevin Williams, were hugely supportive. Kevin urged blackfella and whitefella cultures to move forward together. Wiradjuri man Larry Towney, working further west with the Central Tablelands Local Land Services, spoke about reviving a Wiradjuri seasonal calendar. Larry has been working with *Cementa17* artist

Sauce Towney on an astronomy project that connects the patterns in the stars with Wiradjuri land formations. Larry is also reviving cool burn techniques as a land management method. His presentation complemented Bruce Pascoe's history of Indigenous land practices, and Bruce's project of reviving the cultivation of yam daisy.

For many years, agricultural experimentation at Tarwyn Park (in nearby Bylong Valley) has been rethinking the standard model of British colonial farming. Peter Andrews' Natural Sequence Farming challenges attitudes to water management and soil production. NSF has been highly controversial (and successful) in the use of weeds to improve soil health, fertility, and drought-proof the land. Meanwhile, artist Ian Milliss has since the 1970s been making the link between farming and creativity. In 1975, Milliss discovered the work of another innovative agriculturalist, PA Yeomans, whose Keyline contours and ripping plough (minimising soil disturbance and improving water penetration) revolutionised Australian farming. Under the banner of *The Human Environment Revolution*, Yeomans' vision encompassed 'rebel farmers' rethinking agricultural innovation. In December

2013, in collaboration with Lucas Ihlein, Ian finally managed to get his proposed *Yeomans Project* exhibition up at the Art Gallery of NSW (it had been scuppered in 1975 at the last minute by a nervous board of trustees). Ian's broader project of cultural re-visioning was manifested in his "Welcome to Kandos" poster for the first *Cementa*, which sparked the idea for the Kandos School of Cultural Adaptation.

The first iteration of *Futurelands* was conceived in 2014, in response to an urgent set of local circumstances. Much of the region's prime stud lands and water resources, including iconic Tarwyn Park, were under direct threat from the ever-expanding predations of Big Coal (and further afield in NSW, fracking for gas). Thus the first *Futurelands* specifically focused on art and activism, and brought together artists and local stakeholders for a series of community-engaged artworks as part of *Cementa15*: Craig Shaw of the Bylong Valley Protection Association, activists Bev Smiles and Nell Schofield, and artists Josephine Starrs, Leon Cmielewski, Jenny Brown and Ian Milliss. An earlier Kandos Projects exhibition by the Williams River Valley Artists Projects had challenged the expansion of Big Coal in the region, and they,

too, along with Indigenous artists Karla Dickens and Alesha Lonsdale, addressed the expansion of the extraction industry in artworks for *Cementa15*.

*Futurelands2* had a broader scope. In his presentation, philosopher Jason Tuckwell connected creative practices with natural processes. Jason spoke of techne or 'know-how': the practical capacity of humans to sense our environment and act accordingly. For Jason, this creative activity extends to the collective, active work performed by *all* living things, and this idea resonated with Jill Moore-Kashima's practical discussion of soil biology and its highly productive micro-organisms, and Queensland cane farmer Simon Mattsson's passionate presentation about soil health. Jason's notion that all life must have a certain measure of autonomy and agency also sat well within the Indigenous framing of *Futurelands2*.

Across much of the two days of *Futurelands2* there was consensus on the importance of slow and careful observation born out of respect for living processes. Such observation is at the core of Natural Sequence Farming, which is based on understanding the topography of land, and also why particular plants (that others might call weeds) appear in the



Left: Josephine Starrs and Leon Cmielewski discuss their work at *Futurelands1*, 2014. Right: *Futurelands1* audience in Kandos Projects.



landscape for a certain time, responding to over- or under-supply of nutrients, hence restoring balance. Stuart Andrews gave a firsthand account of the practices on Natural Sequence Farming on Marloo, a degraded property he is now restoring to health (sadly the battle to save Tarwyn Park has been lost).

Haydn Washington, wilderness expert (though he would contest the use of this Eurocentric term), challenges the very notion of wilderness as a concept foreign to Indigenous understandings of country. Haydn was one of the instigators of the successful bid to create Wollemi National Park.

A contentious topic that ran right through *Futurelands2* was the naturalisation of introduced species. Patrick Jones of Artist as Family spoke of indigenous fauna successfully making up for lost habitat by making homes in introduced trees; a respondent in the audience countered with the problem of koalas dying after ingesting the leaves of a particular exotic. Like Stuart Andrews, Diego Bonetto, artist-forager extraordinaire, argues that a plant is only a “weed” if it is in the wrong place; in other words, if its function or action is unsuitable for its location. Much of Diego’s art practice is about reactivating largely forgotten European folk cultures of beneficial ‘weeds’, non-native plants that emigrated around the world with the European explorers. At *Futurelands2*, his *Foragers’ Feast* incorporated five wild foods gathered on the morning of the dinner. Some, like plantain, are of European origin, but we also enjoyed indigenous cumbungi (reeds). Earlier that day, Bruce Pascoe had championed the cakes and breads made of native Australian grains and yam daisy flour.

Economics and energy were very much a part of the whole systems approach of *Futurelands2*. Adam Blakester of Starfish Initiatives and Tracy Norman from Dungog both discussed disruptive entrepreneurship. Smaller rural communities like Kandos have suffered the loss of village commerce to larger regional centres, and disruptive entrepreneurship offers strategies to reverse the trend. Tracy Norman’s example is inspiring. Following the collapse of the ecologically damaging

project to dam the Williams River, Tracy purchased a parcel of rescued farmland for organic beef production and established a paddock-to-plate project for reinvigorating the town of Dungog. Besides the farm, Tracy’s investments include buying the local pub and haberdashery store, generating employment for the locals. Not only does she produce the beef, but she also engages locals to prepare and serve it, as well as developing a point of sale for local craft, and integrating local culinary experiences into the annual Dungog festival. This is an example of practical economics operating at a local scale: the kind of collective revisioning that puts people and the natural environment at the forefront of economic activity.

Geographer Gerda Roelvink echoes the importance of such initiatives as part of community-based economic frameworks that consider the wellbeing of humans and non-humans alike within their specific geographic locations. Unlike labour-focused models of the left, Roelvink is interested in the geographical nature of diverse local networks of economic transformation. There are evident synergies with Tracy’s whole-village approach.

Partnering with the natural environment, Adam Blakester’s ideas about disruptive entrepreneurship extend to innovative use of National Parks and under-protected State Forests for natural burials (State Forests can be mined). Drawing on the cultural sanctity of burial places, this would future-proof National Parks and State Forests from the extraction industries. In the field of energy production, Adam is likewise attuned to local geographies. He has been instrumental in Uralla’s successful bid to become a zero-net town off the centralized grid, generating and managing its own energy supply.

Given our interest in alternative economies, we invited Mark Branson from the newly approved Crudine Wind Farm, which is to be established some twenty kilometres from Kandos. When it’s up and running, a dirty energy feed into the local Mudgee grid will be replaced by clean, local wind power. The wind farm is owned by CWP renewables, a global green energy company. As with

the zero-net towns, this initiative supports the global good in the respect of countering global warming. However, economically, global ownership translates into globalised profits and offshoring, while the zero-net model aims at supporting local economies. That said, Crudine Wind Farm, like other global green companies, is offering a dedicated portion of ownership, through share parcels, to local stakeholders. The old economic models are shifting.

Artist as Family, and Milkwood Permaculture’s Kirsten Bradley (both from regional Victoria) hosted a discussion at Ganguddy. Both groups transform their experience of living in small rural communities into an artform. Unlike the urban-based Situationists of Paris in the 1960s, mapping their *derives and psychogeographies* of the city, Artist as Family and Milkwood blog and teach as they figure out ways to better grow their own food and integrate with the natural environment.

The second-to-last word must go to Gilbert Grace who came to *Cementa* and *Futurelands2* with the idea of realising an idea from Ian Milliss’ *Welcome to Kandos* poster: the Kandos School of Cultural Adaptation (KSCA). Gilbert proposed the growing of a crop of industrial (non-THC) hemp as one of the first projects of KSCA. Gilbert and hemp expert Klara Marosszeky were able to round out the discussions of *Futurelands2* on the many applications of highly nutritious, useful, industrial hemp. If only hemp could

replace the water-guzzling cotton plantations for fibre production, how much more water would be flowing in the Darling?

Lastly, thanks to the artists who installed their works at *Futurelands2*. In the Kandos Community Centre Hall, Genevieve Murray of *Future Method* set up the sculptural form of her ‘viewing pod’, a mobile architectural structure that can be adapted to many landforms and terrains. Tracy Sorenson and Vi Tourle of The River Yarners lent us their collective knitting project, *The Yarned River*, a long and woolly manifestation that meandered around the hall. The *Yarned River* embodies the many voices protesting a proposed gold mine which will pollute the majestic Macquarie River. In the windows of Kandos Projects, Jenny Brown and myself (working as Art and Economics) exhibited an insurance policy that equally pays out to the damager or the damagee. Either way, corporations win, even when sued by class actions. Art and Economics also data-mapped Australia’s energy supply (coal, gas, renewables) across all the states and territories of Australia. Energy supply should be like the weather, constantly updated and geographically specific. As you will discover throughout the pages of this newspaper, the cross-disciplinary conversations in Kandos were lively and diverse, and we look forward to their evolution into *Futurelands3*.



River Yarners Tracy Sorenson and Vianne Tourle at *Futurelands2*.

# SOW THE SEED: ABORIGINAL AGRICULTURE

*Bruce Pascoe*

*Bruce Pascoe delivered a captivating keynote at Futurelands2 revealing the hidden histories of Indigenous agriculture, aquaculture, architecture and more. His talk traversed much cultural, archival and geographic territory. To learn more, read Bruce's award-winning book *Dark Emu*. Here he explains his recent exciting collaborations which will revive and commercialise Indigenous horticulture.*

A country that extols pavlova (actually a New Zealand invention) and Vegemite as their contributions to international cuisine has no authentic cooking style of its own. But for 100,000 years we did. The Australian obsession with denying any Aboriginal achievement in order to avoid conversation about how we came to possess the land is crippling

our diet.

Aboriginal people domesticated grains and tubers and a multitude of other foods, most of which have never been eaten by white Australians. Gurandgi Munjie Food Company (Yuin country) have been growing murnong yams for five years, and are close to being able to sell them commercially thanks to the support of very successful crowd-funding campaign.

This year we are preparing for the harvest of two Indigenous grains; kangaroo grass and panicum decompositum. We've made bread from both flours and the aroma and flavour is superior to wheat flour. Ben Shewry (Chef of the year 2016 at Attica Restaurant) ate two thirds of our kangaroo grass loaf on his own. He was amazed at the taste and texture.

These grains are perennial grasses with amazingly large and deep root structures to take advantage of relatively poor soils

and low moisture levels. Being perennial means the land doesn't need to be ploughed so the ground is less compacted, and the farmer uses less diesel and saves a mountain of labour.

If we could convert just 5% of our agricultural lands to these environmentally friendly grains the contribution to reducing greenhouse gases would be enormous. Australians have adopted solar power despite the coal-dependent whims of government, so maybe it is up to the Australian people to adopt these new plants and new farming techniques and convince government that the benefits far outweigh any residual colonial guilt.

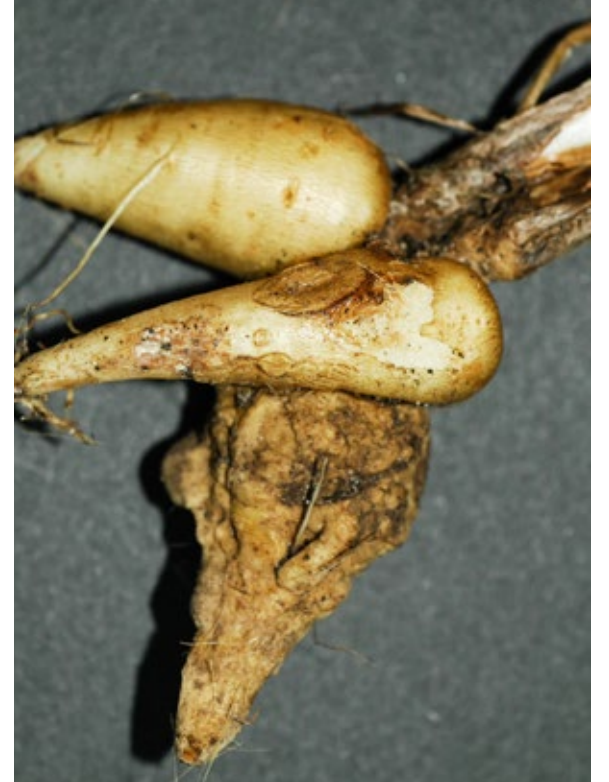
An indication of how much we can learn is shown in the map on the following page. Norman Tindale documented Aboriginal grain harvests over most of the Australian continent but contemporary grain areas make up less than a quarter of that area. What

might happen if we explore those traditional grains and how they were grown in areas we now call desert?

Aboriginal communities are reaching back into their history to re-discover the traditional foods, growing methods and recipes. At Lake Mungo in October 2015, Barkinji, Latchi Latchi and Mutti Mutti people baked bread from one of their traditional grains, panicum decompositum. When the loaves came out of the oven the tears flowed. It was two hundred years since this bread had been baked. It was a threshold moment.

We have begun growing a variety of these grains on ground that has been loaned to us by supporters. We are growing murnong or yam daisy (*Microseris lanceolata*), cumbungi (bulrush), war-rigal greens, lilies and orchids. Experiments have begun with beverages made from daisy bush and saltbush and banksia flowers.





Left: Bruce Pascoe grinding panicum decompositum grass seed. Right: Murnong (Yam Daisy). Images supplied by Bruce Pascoe.

## ABOUT GURANDGI MUNJIE:

Gurandgi Munjie is a group of Aboriginal men and women determined to recover the traditional food plants of their culture. The company has begun growing yams, grains, vegetables, fruits and herbs on several south coast NSW properties. We have growing trials at Berry and Brogo on the south coast of NSW and

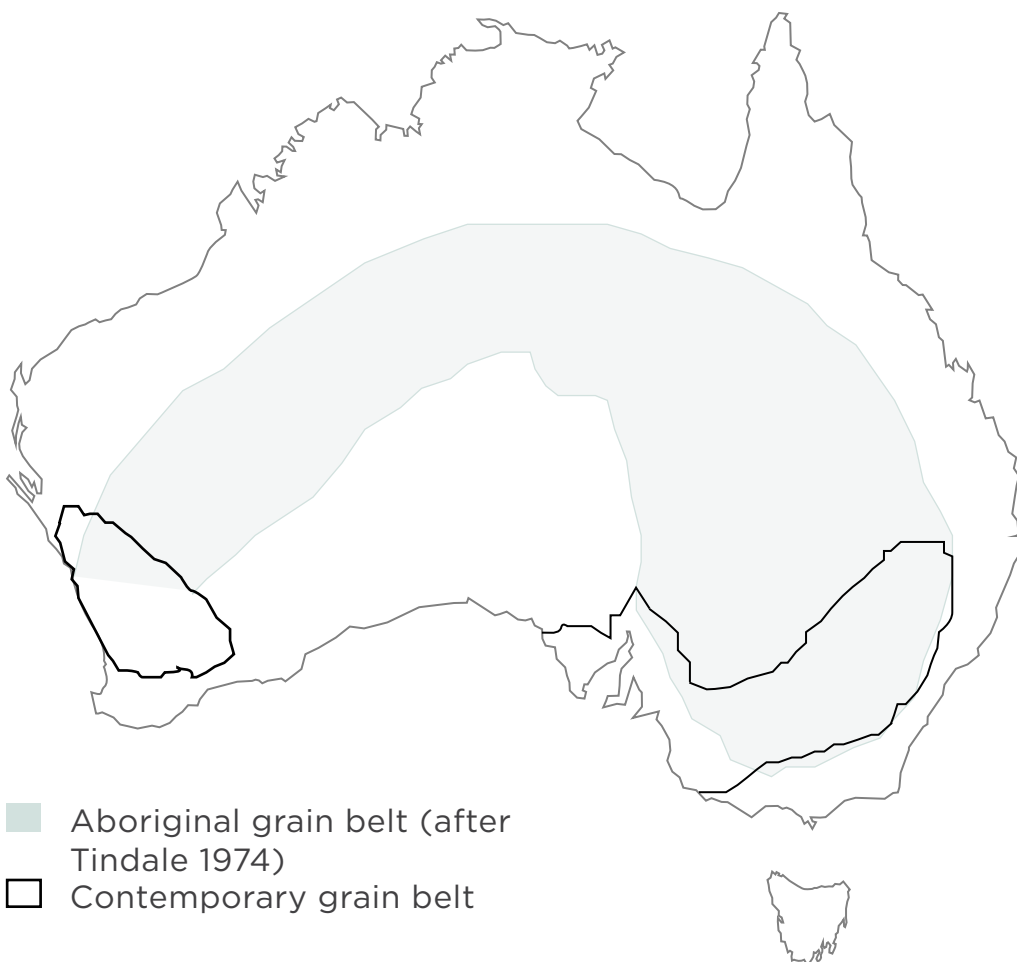
Genoa and Mallacoota on the far east of Gippsland.

Over the last four years we have been propagating murnong (yam daisy) to supply seed for all our trial plots. Everything we've done from soil type, planting mode, harvest rates and season has been put together in an extensive document and represents one of the most significant research studies ever done on the plant. We are in debt to Beth Gott at Monash University but otherwise there is

very little available material on this wonderful vegetable. During the time of the study we've been sharing information and seed with other yam enthusiasts. It seems Australia is on the brink of burgeoning interest in traditional horticulture.

In the spring of 2015 we had our best seed harvest and consequently have four field plantings of murnong for the first time. We are close to regenerating the traditional methods where murnong,

lilies, orchids and moss grew in companionship. The method sweetens and improves the tilth of the soil. Our plants respond to cultivation and reveal the extent of the domestication Aboriginal people imparted. This is an important and unknown element for Australian history but it also holds enormous significance for Australian food production and environmental protection.



Left: Grain belt map comparing current and historic grain harvest areas based on Tindale's documentation. Right: Bruce Pascoe at the Albert St community garden, Daylesford, 2016. Photo: Nina Sahraoui



# NATURAL SEQUENCE FARMING

*Stuart Andrews*

The benefits of Natural Sequence Farming are that you can hold and store more water in the landscape for longer. You can hold and store nutrients in the landscape for longer. You can grow more diverse plant life, and increase your productivity overall.

Natural Sequence Farming was developed by my father Peter Andrews at Tarwyn Park, Bylong. This property was in floodplain country, and was subject to regular flooding. Once we knew we were not going to be able to hold on to Tarwyn Park due to the KEPCO mining venture, Megan and I acquired Marloo, near Rylstone, in 2016 to continue to test and demonstrate the

principles of Natural Sequence Farming. Marloo is a vastly different landscape to Tarwyn Park. The floodplains at Marloo are very small. It has a lot of undulating land, with quite severe erosion issues on the steep western facing slopes. We have started rehabilitating those areas of erosion. We want to increase the biological diversity on the property, because at present there's only a very

narrow range of plant species, which is not enabling the cycling of fertility that we would like.

## SLOW THE FLOW

Our primary objective with Marloo is to slow the speed the water is moving off the landscape. When there is not enough vegetation in the landscape, rain cannot be absorbed into the soil – it just runs off. This means that each time a rain event happens, the topsoil on the farm moves downhill and builds up as sediment in valleys, gullies, and runs into creeks and rivers. With Natural Sequence Farming, we have developed many ways to interrupt water flow. These include

introducing obstacles on sloping land to capture and retain biological matter and prevent topsoil run-off, and contours that direct water to meander horizontally. We also introduce material and self-seeding plants in gullies and small creeks to create wetlands and swampy meadows. These are strategies for restoring the flood plains and “chains of ponds” that used to dominate the Australian landscape before our farming methods established the incised creeks most of us are familiar with. When you begin to recognise how the Australian landscape used to function to maximise the distribution and retention of water, these incised creeks begin to look as if they've been purposely



Gilbert Grace observing the depth of an eroded gully at Marloo, April 2016. This slope can be seen behind Stuart in the other images, having since been filled in.



Google earth imagery showing the early establishment of contours at Marloo in 2016.



Photo by Lucas Ihlein.

designed to move water off farms as quickly as possible.

## BIODIVERSITY

Biodiversity is essential for all farms. The greater variety of plant species (both edible and inedible) and animals you have on your property, the more resilient and productive your farm will be. Inedible plants are important because they maintain the structure of the soil to support the regrowth of edible plants that have been grazed. The shade a biodiverse ecology creates also cools the overall temperature of the landscape and maintains its water content.

## SUCCESSION

A key principle of Natural Sequence Farming is managed succession. Eroded landscapes need to first be stabilised before they can be restored to pasture or to support more diverse, native

plant life or crops. Weeds are nature's repair system – we call them 'pioneer species' because when rain falls on denuded land, they are the hardy, tenacious plants that first take root. Rather than fight them with herbicides, we need to recognise the value they bring. Not only do they inhibit the further loss of nutrients by creating a structure for topsoil, they serve as 'fertility donors'. Weeds can be knocked down and become mulch, allowing the carbon content they've created through the process of photosynthesis to seep into the soil. It is this process of accumulated fertility that enables you to actually generate new soil. Also, when animals forage on weeds, they distribute that organic content through their droppings, contributing to the fertility cycle of your whole property. Once the soil is more fertile, it can then support other plant species. This means that while the presence of weeds can be a sign of degraded

land, their ecological function is actually to aggrade land. It is critical to remember that plants make soil – if we let them.

Natural Sequence Farming principles bring benefits to your farm because when you are able to hold and store more water, you stop your nutrient losses. Your productivity lifts without the use of expensive chemicals or artificial fertilisers to stimulate your system. If you are in a flood plain system, and you're working on a flow line, you could see benefits the next rain event when that stream flows. If you are in a more sloping landscape, then it may well be one to two years before you see vast benefits.

In the coming years, Tarwyn Park Training will be offering training courses both at Marloo, and at the Malloon Institute in Braidwood. These courses teach people how they can implement Natural Sequence Farming techniques on their farms:

- How to slow the flow of water off their property.
- How to build contours and create structures in gullies.
- How to increase biological diversity on the farm.
- We teach participants what plants do, and why every plant plays an important part in their productivity system.
- We teach people where their animals should go. There are certain parts of the Australian landscape that are sensitive to hard-hooved animals. We teach people how they can still use their property for full productivity, so long as they keep their animals away from sensitive areas of the landscape.
- We teach people about filtering, so that they can establish plant-rich wetlands, reed-beds and swampy meadows that naturally extract nutrients and pollutants from water that is moving through the landscape.

# READING THE LANDSCAPE

*Jill Moore-Kashima*



Reading the landscape begins from the premise that we can't decide anything meaningful about what's around us until we observe it carefully and are open to anything it may have to say – about both now and the past. Probably the most important thing we can do is slow down and really look. Try to understand what, if anything, has been lost and what ecological services are missing in consequence. Variations in plant communities, seepage and drainage lines, underlying rocks indicating soil type – all these elements give important information about land history and capacity. But it is crucial to understand that despite apparent constants, landscape is essentially dynamic, in a state of constant change within broad parameters. It is a series of interrelated cycles. And certain conditions must be met to keep those cycles healthy.

Early explorers marvelled at the soft soils, fertile yam fields and abundant grasslands they encountered on expeditions beyond Sydney town. But within a few years country which had been consciously managed by Indigenous stewards for generations had become compacted and unproductive for European type agricultural enterprises.

In many places the topsoil had first been noted as deep and spongy, indicating rich humic aggregates. But when new factors are brought into a

landscape – such as large mobs of hard hooved animals where before there had been only intermittently ranging soft footed ones – things start to change. We know these changes occurred over a short amount of time, and earlier explorers' accounts of fertility were buried under stories explaining Australia as a geologically old and eroded continent of inherently low agricultural capacity. White settler accounts of harsh toil for little return in an unforgiving environment overtook the national consciousness. Writers like Henry Lawson confirmed the idea that life on the land was a battle against the elements, not a partnership.

Looking at this from a 21st century viewpoint, it's clear that at least two crucial things happened in the first 100 years of white settlement: drastic

disruption of the carbon cycle, and drastic disruption of the water cycle. These are interrelated management issues, because landscapes are systems of wholly integrated processes. Pushing one out of kilter has a cascading effect.

Ideally, falling rain completely infiltrates soil and becomes available for plants. But when soil is compacted, bare, or for some reason hydrophobic, rain will run off carrying eroded soil with it.

The sudden onslaught of huge herds – numbered in their thousands – of both sheep and cattle had a powerful impact on Australian soils and vegetation. Not only were there hard cutting hooves, but sheep teeth in particular cropped native grasses almost to the ground. They severed above-ground growing points which

are a feature of native perennials such as the iconic Kangaroo Grass, causing decline and inability to re-sprout.

These herbivores also had unprecedented dietary demands. Bred over hundreds of years in Europe on different and younger geologies, sheep and cattle had higher needs for nitrogen, phosphorus and some other minerals than older Australian soils could supply. Whereas Australian plants and animals had co-evolved to deal with any limitations, the voracious newcomers stripped vegetation in desperate search for nutrition. It wasn't long before the most desirable native grasses were eaten or trampled out and replaced by bare ground or less nutritious forbs. So began the loss of biodiversity, and the lessening of crucial bio-stimulation that biodiversity brings.

This interactive change caused by settler herds extended to changes beneath the surface. As minerals were removed in feedstuff, and below ground biota changed, the soil began to acidify. There was no longer adequate calcium to maintain suitable pH, so some of the major soil nutrients to which they'd had chemical access before became less accessible to plants. As the mineral calcium also has the physical effect of increasing the number and size of microscopic pores in soil, loss of calcium meant



---

## Humification cannot proceed unless there is a continuous supply of fuel for soil microbes. There must be a continuous supply of green leaves to perform continuous photosynthesis.

---

decreased potential for both rain and oxygen to infiltrate.

In pre-settler environments water entering rivers and creeks tended to filter underground rather than flow overground. In this way evaporation in Australia's hot sun was reduced and precious water preserved. However this arrangement did not suit the herders, whose animals required far larger volumes of water than native creatures. Herders excavated the sides of creeks and removed vegetation to increase access.

On top of all this, with the water cycle and system under which Australian grasslands had evolved catastrophically disrupted, large tracts of native vegetation important to healthy maintenance of country were destroyed to increase croplands and grazing acres. The pathway to continuous formation of humic compounds was weakened. Grasses and other plants were then forced into survival mode by beginning to mine the store of carbon-rich humus sequestered beneath them. In other words, they raided the bank which had been their buffer for thousands of years.

Errors in past understandings of soil were largely made in ignorance. Currently, much research involves harnessing the neglected third leg of soil, which is biology. The nexus between organic matter and biology is a focus. For many years the so-called "green revolution" worked on the physical and chemical aspects of soil, totally neglecting biology. Throughout this "green revolution" (predominantly the years post WW2) crop yields increased as farmers had access to fertilisers like superphosphate, but overall soil health deteriorated as soil microbial life declined, continuing the downhill slide which had begun with white settlement.

Carbon is well known as an atmospheric gas. It also underpins the fertility of soils worldwide. While most of the emphasis on carbon capture in Australia has been on sequestering it in trees, soil has enormous capacity to capture and store carbon at depth for long periods of time.

Dr. Christine Jones, a preeminent researcher in this field, maintains the world's soils currently hold around 3 times as much CO<sub>2</sub> as the atmosphere and 4 times as much as is held in vegetation. And it has the capacity to sequester much more.

Humus is an extremely stable form of soil carbon, so in addition to enhancing nutrient availability for plants and assisting in soil porosity and aeration, carbon-rich humus is intimately connected to water retaining capacity. Low soil moisture and low levels of soil organic carbon go hand-in-hand. It's estimated that humus can hold up to 4 times its weight in water, like a giant sponge, slowly releasing it as required.

Building soil carbon requires green plants and soil microbes, in particular fungi known as Arbuscular Mycorrhiza. Dr. Jones posits a system she calls Yearlong Green Farming in order to maximise the process. The fundamental is photosynthesis, which takes place in the chloroplasts of all green leaves. Imagine these as solar panels, drinking in sunlight energy then chemically transforming it to a form of glucose using CO<sub>2</sub> from the air, and water from the soil.

This glucose is then re-synthesised into a wide variety of carbon compounds. A percentage of these are taken down into the roots and exchanged with soil microbes. These microbes feed

on the carbon compounds and in return provide the plant with minerals mined from inorganic rock particles, helping to provide the mineral density so crucial for any animals – and humans – that eventually eat those plants. The more green leaves a plant has the more roots there are, and the more carbon is bridged to microbes in this symbiotic process.

The final stage in building stable soil carbon is humification. In this process soil microbes re-synthesise and polymerise labile carbon exuded from plant roots into high molecular weight humic substances. These are gel-like and bind to form an integral component of the soil matrix.

Humification cannot proceed unless there is a continuous supply of fuel for soil microbes. That is, there must be a continuous supply of green leaves to perform continuous photosynthesis. If this stops, carbon exuded from roots simply oxidises and is recycled to the atmosphere as CO<sub>2</sub>.

Under some circumstances, soils may be bacterially dominated – that is, plants growing in them form mutually beneficial relationships with bacteria rather than fungi. Examples are our common vegetables and annual grasses. These don't form humus and sequester carbon in the same way that fungally dominated perennial crops in no-till management or unfertilised grasslands do. Although Mycorrhizas associate with 85% of the world's plants, they are sensitive to tillage and application of fertilisers such as phosphorus or nitrogen. But in themselves, they increase the health and nutrient density of plants with which they symbiotically associate.

Finally, I make brief mention of a grazing system that has had growing influence worldwide. It's connected to the ideas behind Dr. Jones' Yearlong Green Farming, and is essentially a biological system which builds on the beneficial accumulation of humus through controlling the movement of pastured animals across the landscape.

It's variously called Wholistic, Cell, or Managed grazing. The principles are simple, but in practice they require an excellent knowledge of local pasture plants and patience to observe and monitor growth across all seasons.

Managed grazing requires many fences enclosing small paddocks, each with an off-stream watering point. Animals are moved from one paddock to the next frequently, depending on pasture growth rates with the seasons. At high growth times they may be moved daily, so grasses are never cropped so low that recovery through rapid photosynthesis is inhibited. There is increased biodiversity in pasture species, and the associated vigour that comes with bio-stimulation. Carbon sequestration speeds up with maximised mycorrhizal hyphae and increased humus results in more moisture held in the soil. Because stock move before they get bored and start browsing regenerating native shrubs and trees, these also flourish bringing back native birds and other system beneficials.

With attention thus turning to understanding how soils and landscapes work, rather than just how they can enrich us quickly, perhaps improved health and function is possible. But the path to sustainability is long.

---

## Ideally, falling rain completely infiltrates soil and becomes available for plants. But when soil is compacted, bare, or for some reason hydrophobic, rain will run off carrying eroded soil with it.

---

# DISRUPTIVE ENTREPRENEURSHIP

Adam Blakester



My talk is focussed on the theory of change which is emerging and being created through the work of Starfish Initiatives. Starfish is a charity. It's focus is on rural sustainability. It is one of only a handful of organisations in the world which specialises in this important rural, regional and remote realm. 'Disruptive entrepreneurship' describes two key elements of our model.

If the existing isn't working, isn't fit for purpose and isn't demonstrably capable of changing, then new models and ways of organising, living, working and being are needed. We are witnessing right now the early stages of the Earth's 6th Great Extinction. It is called The Anthropocene Age, since it is the first great extinction to be caused by humanity. I'd like it to be the last. Better still, I'd like to avert it altogether. And this is just one of many global-scale negative trends playing out at this time.

There are solutions too, such as the extraordinary breakthroughs in clean technology for energy, health, education and communication. So too the outpouring of people coming together to create positive change - a movement of organisations for good on a scale that is truly inspiring. This movement has been nicknamed 'The Blessed Unrest'.

However when the positive and negative mega-trends are viewed together, the net effect is still a situation of great decline - especially for nature and the world's poorest and most socially excluded peoples and cultures. In the twenty years I've worked in

social change for sustainability I've seen so many positive and promising initiatives captured or corrupted by the dominant system and players - from the mega scale such as the Renewable Energy Target, Carbon Package and CSIRO's world-leading climate change work; to the micro scale of highly successful programs creating healing for traumatised people and communities that lost funding and support due to the toxic impact of the Northern Territory Intervention.

My own experience is that hierarchical systems are an epicentre of this problem. They centralise and empower a truly miniscule number of individuals - what I call a pica elite - to have a truly ridiculous level of authority and responsibility. Furthermore, the smaller the number of people with authority, the easier it is to capture and corrupt the system that they are responsible for.

Given that the richest 62 people on Earth now hold as much financial wealth as the poorest half - or 3.6 billion people - there is a very real risk that unhealthy, if not dangerous, self-interest is at play on an unprecedented scale. This has been unequivocally witnessed many times. Think big tobacco, big pharma's influence on health policy and how the coal and oil barons have eroded energy and climate change progress.

Australia has some of the most oligopolised industries in the world. Think grocery, banking, media, energy and politics which are all dominated by just a few players. Yet all too often we accede the sovereignty of our work to these traditional hierarchies - particularly to government and politicians, though corporations have now created the very same illusion of control over our work too.



## THEORY OF CHANGE

This is where the 'theory of change' comes in. Buckminster Fuller said: "You never change anything by fighting the existing. To change something, build a new model and make the existing obsolete." In a similar vein, John Maynard Keynes said: "The difficulty lies not so much in developing new ideas as in escaping from old ones."

Yet, I've come to observe that nearly all change strategies are focussed in the very opposite way to what Bucky and Keynes were saying. I see that most aim to change the existing systems, organisations and perhaps most of all in Australia, government policy. I see that most people seek to create change either from outside of this establishment - such as through the use of campaigns, lobbying, petitions, protests, proposals and the like - or from inside, as Machiavellian agents for good.

My view is that each of these change strategies wrongly presumes that working with and through the existing status quo and system is the pathway to sustainability. This all too often turns out to be futile because the gravitational forces of the inherent greed, bigotry, fear, hate and destructiveness of the pica elite at the top of these hierarchies - and the few who pull their strings that are hidden from our view - are so resistant to letting go of power and control.

Given this, I assert that our

creativity in regard to change strategy is captured and blinkered. But of course, the existing players, organisations, structures and systems hold the resources, the power, the authority, the influence and have on their side the powerful inertia of the way things are and have been. It is alluring to ignore the self-interest in this broken system and want to work with them and within the establishment. It is these very ingredients that the power-holders so silkily offer - like funding, or a seat at the table, or a media photo shoot even - to start to misappropriate the positive change which will inherently disrupt their control.

## ENTERPRISE

So this is why 'enterprise' is of central importance to change for genuine sustainability. For when we are able to attract and generate resources for the very purpose we are working for, without any overt or covert constraint, we see the emergence of real flow and lasting change. Part of being 'enterprising' is merely the inherent creativity that comes with being entrepreneurial - of creating and moving ideas into action, and bringing them into being.

However creativity is not new when it comes to social change for sustainability. What is new is the ways of attracting and generating the material resources that are required to do this work well and which are immune to the risks of capture and corruption



by the status quo.

## DISRUPTION

So while this kind of change disrupts the control of unhealthy and pathological systems of control, its purpose is of course to enable sustainability - to open up possibilities for greater caring, inclusion, wellbeing, life and love. While change of any kind can feel chaotic - and it comes with the almost ever-present fear of letting go of the familiar - this kind of 'disruption' intends only for harmony. Really then, the 'disruption' in this form is merely the change away from the harmful towards the kind.

The friction from the disruption arises less from the new and more from the slipping grip of these existing and false forces which are holding things back, forcing them in an unhealthy direction or simply incapable of doing the work that is needed yet not willing to let go of control. The 'disruption' which Starfish seeks to create and enable is best described by something that Mark Twain said which inspires me deeply: "Few things are harder to put up with than the annoyance of a good example." Starfish has created and supported some really 'good examples' that disrupt and annoy the status quo!

## A DISTRIBUTED AND LEADER-FULL NETWORK

Before sharing some of Starfish's annoyingly good examples, there is one more key aspect of our approach that I need to explain. We are a network not an organisation.

In the same way that the establishment can capture, corrupt and stifle change, so too this unhealthy pattern can be present inside organisations - particularly as they grow and invariably become more hierarchical and centralised. Starfish's sustainability initiatives are led by the people and partners involved in each of them. We provide the supporting systems to aid them. We don't control them. They decide.

This network model allows for quite profound levels of collaboration. In just five years of existence our 100 plus sustainability initiatives have included collaboration

with 500 plus partners; involved 10,000 direct participants; on initiatives led by 300 professionals and 1,000 volunteers.

## ANNOYINGLY GOOD EXAMPLES

So what then are Starfish's annoying good examples?

We are leading one of Australia's largest community solar energy installation programs; and just now are completing Australia's first community funded, council-operated solarfarms - one of which will be the largest floating solar power system in the country.

We have facilitated the design and creation of some of the most participatory sustainability strategies in the world - for the New England High Country, Border Rivers-Gwydir Catchment and Tamworth Youth. Each of these strategies has literally involved thousands of people and hundreds of organisations - proving the possibility of a depth and breadth of participation hardly seen before in human history.

We are working on the Centre for Reconciliation at Myall Creek, focused upon healing one of the oldest human conflicts of all - white on black discrimination and violence. Despite the global and universal nature of this horrid conflict, Myall Creek has the potential to be the first dedicated centre of this kind in the world.

We have created the world's first open-source model for rural towns and villages to design their own 100% renewable energy transition plan - called Zero Net Energy Town.

We are pioneering the establishment of Australia's first, fully integrated natural funeral and burial service which has the potential to fund landscape-scale regeneration across the country.

And lastly, we have played a significant part in raising \$20m in funding for others: Australia's only regional residential alcohol and addiction rehabilitation centre - Freeman House; a collaborative network for mental health services; and rural Australia's only purpose-built and designed youth facility and service centre - The Tamworth Youthie.

Starfish's 'enterprise' approach to this work has been a major contributing factor to us growing to \$1.5m in cash income last year. It is important to note that this has been achieved in an area of work that is notoriously hard to find funds for. In addition, there have been pro-bono and voluntary contributions to this work that often far exceed the value of cash contributions many times over.

As a charity we still seek donations and grants, however as an enterprise we also have professional fee-for-service projects with our partners - or as I colloquially call them, our 'collaborators with cash'. We have successfully tendered for commercial work - at times out-bidding big commercial players - and we generate our own revenue, such as through the Farming the Sun community solar energy installations.

Behind-the-scenes, another strength of our network-based organisation model, with shared leadership and distributed responsibility, is an amazing level of efficiency. Starfish's overhead costs are less than 3% of our

income. With this leanness we already have enough funds in the bank to operate for a decade at least. So our change strategy and approach isn't going away any time soon!

For us, these 'good examples' prove the possibility of new ways of living, working and being. We believe that these are ways that are better able to work for the whole rather than just a few.

However these are mere seeds of sustainability. We have a long way to go and a lot more to grow.

## WHERE TO FROM HERE?

The key people in our work are our Associates. These are passionate professionals who bring deep commitment, expertise and experience. They are the facilitators and enablers of change. While there are many professionals who have a desire to do this work, far too few have the commitment and courage to step out of the status quo and give this the time it takes to create a genuinely new way of working and earning a living.

We need to find more of these people and I'd welcome your interest if you are keen.

Lastly, I'd like to share that we have only just secured our full tax deductible donation status. This took five years of negotiations with the Australian Government, particularly because of the tensions which arise between enterprise and charity definitions. The good news is we've just got word that a philanthropist is providing Starfish Foundation with a \$1/2m donation to start building a capital fund. This, in turn, will provide a modest, though long-term source of funds for important rural sustainability initiatives.

SINCE 2008 ...

 131  
Sustainability  
Initiatives

 159  
Funders

 590  
Partners

 297  
Contractors

 1105  
Volunteers

 11861  
Participants

# TRANSFORMING ECONOMIES THROUGH CARE-FULL FARMING PRACTICES

Gerda Roelvink

*Futurelands2* brought together people involved in an extraordinary range of initiatives centred on our relationship to land. All of these initiatives have the potential to build economic relationships that put social and environmental concerns alongside or before those of profit making.

Yet it is not these kinds of initiatives that we typically hear about when we are updated on the state of the economy: the economy that is said to shape our lives. The economy discussed by politicians and many economists is frequently depicted as a machine. This is perhaps best illustrated by the vision of the market as a self-regulating phenomenon. This model suggests that while we might be able to tinker with the economy, it should be largely

left alone. Indeed, the machine is seen to be threatened by any intervention by unions, activists and others.

There are a whole range of assumptions that accompany this vision of the economy as machine, particularly those associated with growth. These assumptions are prominent in many areas of the economy, including in farming. For example, some agricultural innovations, including those seen to respond to landscape degradation, are too narrowly evaluated in terms of productivity and economic efficiency – in other words how well the farm is ‘working’.

For some time now scholars and activists have been highlighting the problems with the machine model of the economy.<sup>i</sup> As the authors of *Take Back the*

*Economy* (2013) point out, continued growth is unsustainable and the economy machine seems indifferent to the vast inequalities that exist around the globe and unethical economic behaviour. They also argue that the idea of the economy as machine constrains what kind of economic actions we can take – we are simply positioned as consumers, producers of commodities and workers in this machine. This kind of economic thinking thus constrains the ethical economic actions we can make in our everyday lives and, importantly, how we care for all those others implicated in our everyday living, including other species.

Farming provides many good examples of what is at stake here. While yield is always going to be a primary concern in farming, an exclusive focus on productivity can override other ways of valuing farming activities, including relationships with other species. Maria Puig de la Bellacasa (2015) has demonstrated this clearly in her research on soil.<sup>ii</sup> She shows how certain kinds of soil science responding to the crisis in soil health, especially those orientated towards agricultural innovation, characterise soil as an input in agricultural production, one that needs to be replenished certainly, even through organic fertilisers, but ultimately soil is merely an input in the service of humans and the profitability of the farm. The language of productivity here translates into a logic of instrumentalisation that shapes human relationships with other species (in this case the organisms that comprise soil). This perpetuates the very human-soil relationships that depleted the soil in the first place and provides no starting point from which to nurture the human-soil relations on which our lives and many

others depend.

Many people know that the economy machine is not all there is to the economy. Feminists in particular have fought for a very long time to have women’s labours, for example, included in our vision of the economy. If one looks for it, there is in fact enormous diversity in how people support their everyday lives. In order to challenge economy machine thinking and open up the options we have to live well with others, community economies researchers are documenting this diversity to reframe the mainstream language of economy.<sup>iii</sup> They aim to help us see and value all the economic activities that support our lives, and ultimately to make ethical decisions about the kind of economic activities we want to support in light of this range of activities. One tool for doing this is the iceberg diagram (see Figure 1), where what might normally be thought of as the economy (wage labour for a capitalist firm in a market) is depicted as only the tip of an economic iceberg which is full of a range of economic activities and forms not typically given as much prominence (those lying below the water line).

Another tool for reframing the economy is the diverse economies table developed by J.K. Gibson-Graham (see Figure 2). The aim of this table is to make an inventory of all economic activities. Its columns represent diverse ways of remunerating labour, enterprise types and various forms of transaction, with the potential for additional columns.

What you see here is the iceberg diagram in table form with the tip of the iceberg or what we often see represented as ‘the economy’ in the top row. Below this are two rows of other activities that make our economies. The middle row is like the top row

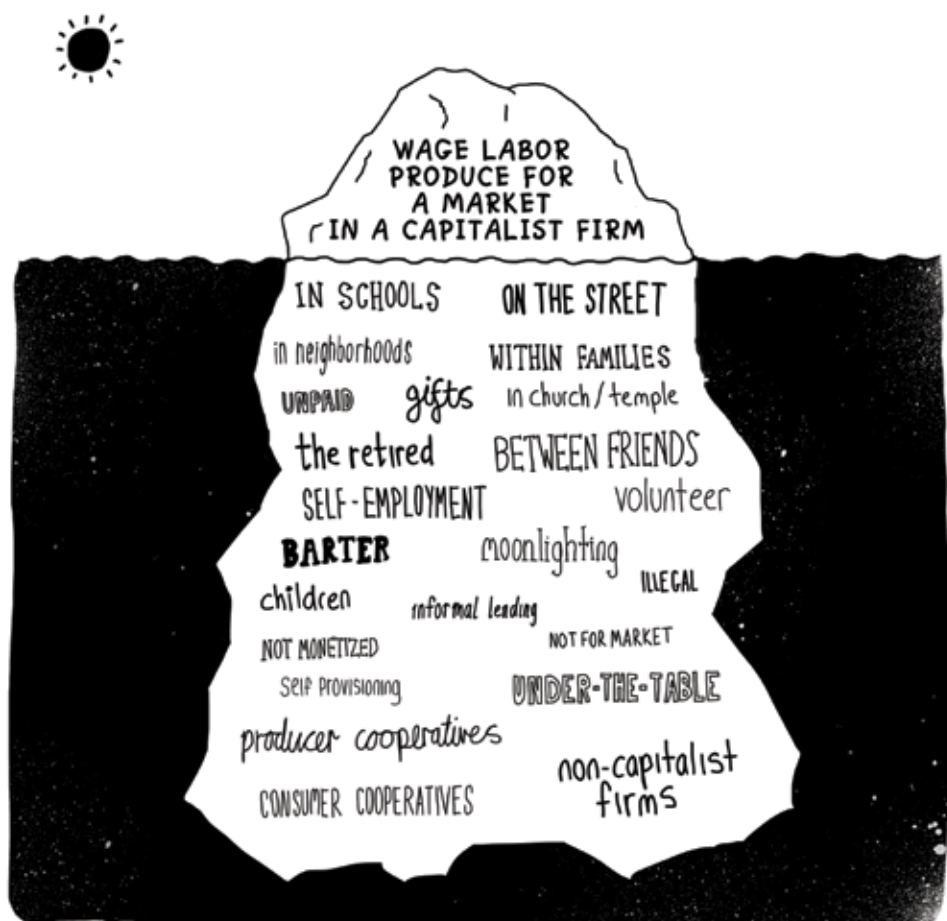


Figure 1: The Iceberg Diagram. From Community Economies Collective 2001. Drawing by Ken Byrne.

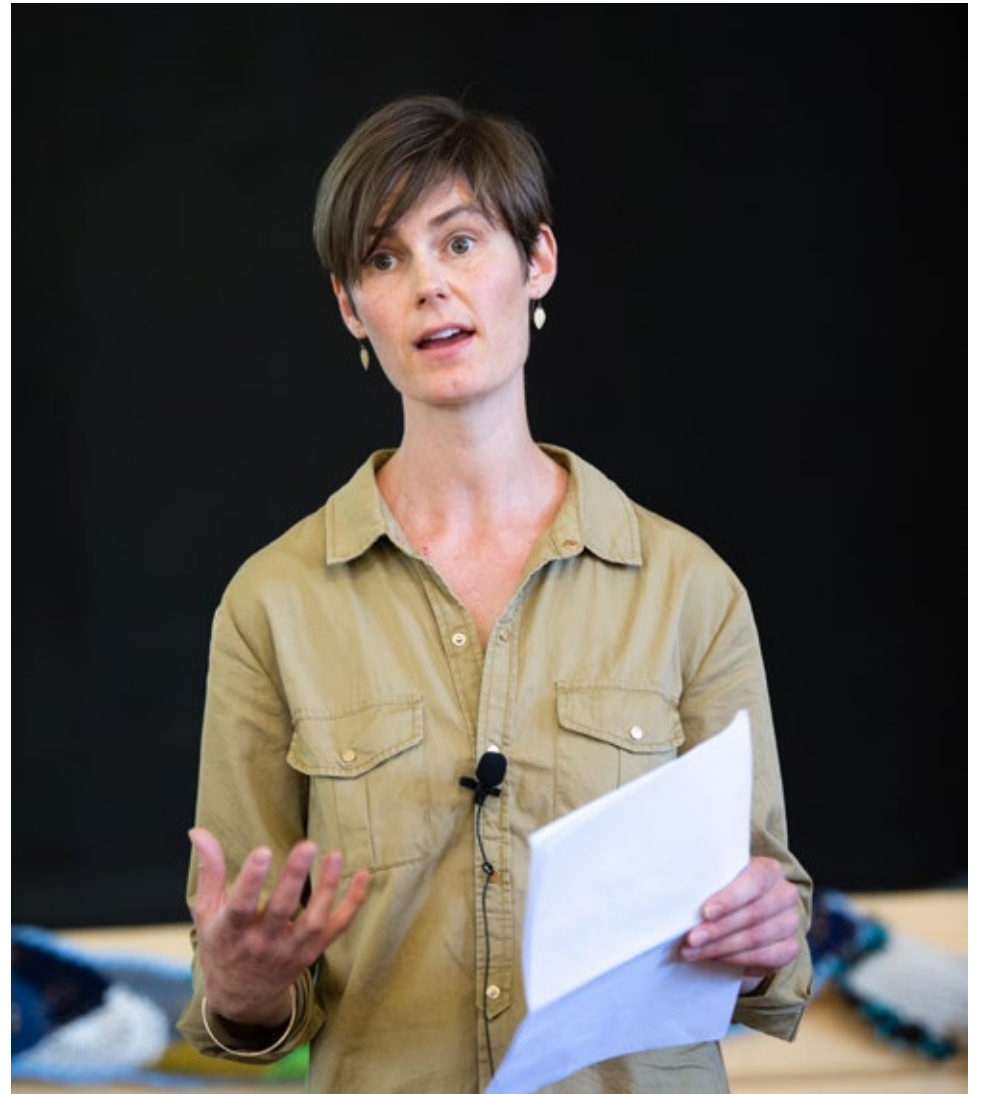
but with an alternative dimension to it, to account for economic arrangements like fair-trade markets that aim to remunerate producers more fairly and ensure better social and environment conditions during production. The bottom row includes aspects of the economy that are under the waterline and usually treated as external to our economic lives. You will see that so-called good and bad activities are listed here (see *Take Back the Economy* or *A Postcapitalist Politics* for a fuller explanation).

A single person's daily activities might occupy many different cells in the table. Likewise, a sector may include several different economic activities. In farming, for example, one could differentiate a large-scale agri-business farm from one oriented to meeting an environmental goal (such as a farm with a conservation covenant or a cooperative farm). You could also find many different forms of remuneration and transactions on a farm including unpaid work or non-market transactions such as the gift of produce. Pushing this reframing of the economy further, we could even begin to include other entities in the table such as working soil or working rivers.<sup>iv</sup>

Reframing the economy enables us to appreciate a wider range of economic relationships

–all those that support our lives. In fact it presents us with an economy overflowing with enterprises, activities, labours, transactions and more. But more than this, it makes transparent the ways in which our economic lives are intertwined with others. This enables us to make ethical decisions about which forms of economic life to support. Such ethical decision making is premised on the recognition that our economic lives are intertwined and interdependent with each other and other species.

So what would a diverse and community economies approach to agriculture be, one which incorporates a recognition of our interdependence with others? Let's return to the example of soil. While all farming involves caring for other species, when productivity is the dominant goal care can become very instrumental. However, as Puig de la Bellacasa suggests, when an element like soil is understood to be part of a wider foodweb, we move from caring for soil in order to produce maximum yield to caring for it as a practice of "maintaining, continuing and repairing living webs of interdependent relations".<sup>v</sup> From this perspective humans depend on soil not simply for its role in production but also for its vital role in the life processes of many different interconnected



species. No longer merely consumers of what is produced by the soil, humans become a functional part of the soil community, as producers of organic waste for example. When a proportion of the surplus or profit made from production is returned and contributes to soil health, a different economic relationship to soil is in play.

Caring for soil in a non-instrumental way provides just one illustration of how a community economies approach to agriculture can be exercised. By telling these stories we increase the visibility of diverse and community economies and thus join with others to dismantle the economy machine.

Transactions	Labour	Enterprise
<b>MARKET</b>	<b>WAGE</b>	<b>CAPITALIST</b>
<b>ALTERNATIVE MARKET</b> <i>Sale of public goods</i> <i>Ethical 'fair trade' markets</i> <i>Local trading systems</i> <i>Alternative currencies</i> <i>Underground market</i> <i>Co-op exchange</i> <i>Barter</i> <i>Informal market</i>	<b>ALTERNATIVE PAID</b> <i>Self-employed</i> <i>Co-operative</i> <i>Indentured</i> <i>Reciprocal labour</i> <i>In-kind</i> <i>Work for welfare</i>	<b>ALTERNATIVE CAPITALIST</b> <i>State enterprise</i> <i>Green capitalist</i> <i>Socially responsible firm</i> <i>Non-profit</i>
<b>NON-MARKET</b> <i>Household flows</i> <i>Gift giving</i> <i>Indigenous exchange</i> <i>State allocations</i> <i>State appropriations</i> <i>Gleaning</i> <i>Hunting, fishing, gathering</i> <i>Theft, poaching</i>	<b>UNPAID</b> <i>Housework</i> <i>Family care</i> <i>Neighbourhood work</i> <i>Volunteer</i> <i>Self-provisioning labour</i> <i>Slave labour</i>	<b>NON-CAPITALIST</b> <i>Communal</i> <i>Independent</i> <i>Feudal</i> <i>Slave</i>

Figure 2: The Diverse Economies Table. From Gibson-Graham *A Postcapitalist Politics* (2006), developed by J.K. Gibson-Graham.

Notes:

- i See in particular J.K. Gibson-Graham's books *The End of Capitalism (As We Knew It)* & *A Postcapitalist Politics* (both published in 2006), and *Take Back the Economy* (2013), co-authored with Jenny Cameron and Stephen Healy (all Uni of Minnesota Press).
- ii M. Puig de la Bellacasa, 2015. "Making Time for Soil: Technoscientific futurity and the pace of care." *Social Studies of Science* 45(5): 691-716.
- iii See <http://www.communityeconomies.org>, which documents the activities of an international group of scholars and activists working to reframe the economy and open up ethical debate about economic life; Community Economies Collective. 2001. "Imagining and Enacting Noncapitalist Futures." *Socialist Review* 28(3-4):93-135.
- iv See my 2016 book *Building Dignified Worlds* (Uni of Minnesota Press) and my work with J.K. Gibson-Graham: "A Postcapitalist Politics of Dwelling." *Australian Humanities Review* 46: 145-158 (2009), and "An Economic Ethics for the Anthropocene." *Antipode* 41(1): 320-346 (2010).
- v Puig de la Bellacasa (2015), 703.

# SUNFLOWERS AS AGRICULTURAL AND CULTURAL CHANGE AGENTS

*Lucas Ihlein and Simon Mattsson*

*Nuffield Scholar and Queensland sugar cane farmer Simon Mattsson gave a passionate speech at Futurelands2 on the importance of soil health in agriculture. Sediment, fertiliser and pesticide run-off from terrestrial agriculture in Queensland is one of the major threats to water quality in the Great Barrier Reef. Since 2015, Simon has been collaborating with KSCA artists Lucas Ihlein, Kim Williams and Ian Milliss. Their project Sugar vs the Reef? brings together farmers, artists, and community members for a series of public events, including Sunset in the Sunflowers (described briefly on these pages) to catalyse positive transformations in the sugar cane industry. The group is currently working towards the creation of a crop of sugar cane and sunflowers as a land art installation at Mackay Regional Botanic Gardens. The project generates space for public education around soil health, agricultural economics and labour histories.*

In November 2015, Simon Mattsson's first ever dual crop of sugar cane and sunflowers was in its prime. Here's Simon with fellow canefarmer Alan McLean, posing among the cane and flowers:



Rewind a few months to the time of planting. Here you can see sugar cane popping up in the foreground, with sunflowers in the row planted behind:



And above you can see it from another angle, to give a sense of the scale of this experiment.

This dual crop idea is unusual: the sugar cane industry generally deploys cane as a monoculture. Sometimes a legume (soy beans for example) is planted as a rotation crop at the end of the sugar cane's ratoon cycle, but the idea of planting something else at the same time is (depending on how you look at it) quite new, or very very old.

Simon's experiment tests how the two crops might be mutually beneficial. In an ideal world, this is what happens:

The sunflowers and sugar cane are planted together in early April. The sunflowers pop up very quickly to take advantage of the available sunlight. Annual plants like sunflowers grow much faster than perennials like sugarcane in the first 3-4 months after planting. The sunflowers shade the soil, suppressing the emergence of weeds.

The sunflowers assemble their own sub-soil community (nematodes, bacteria, animals, fungi) which flourishes around their roots in the rhizosphere. This is a different rhizosphere community to that which accompanies the sugar cane roots.

This diversity (two subsoil communities instead of one) helps prevent the build up of the pest species which are attracted to monoculture crops. Hence, pesticide use can be reduced.

By late August, the sunflowers are ready to harvest. At this stage, the sugar cane is only half grown, so you can harvest the flower heads over the top of the canestalks without disturbing them. Thus you get two harvests from the same field.

After harvesting the sunflowers, their stems can be knocked over in the field to form part of the biological matter mulching and enriching the soil, and further supporting the growth of the cane.

Next year, the cane can be harvested as normal. At the harvest, it would be a good idea to check the sugar-per-tonne levels of this yield to see if the dual cropping with sunflowers has had a positive effect on the sugar cane.

In theory, the increased diversity in the sub-soil ecosystem, and the addition of more biological matter to the field, should result in an increase in soil carbon. This would perform carbon sequestration in the soil (carbon dioxide having been pulled from the



Photo by Summer Rain Photography, Mackay, 2015.

atmosphere for the building of the sunflower plants).

A boost in carbon content also makes the soil more “spongy”, so it can better retain moisture, requiring less irrigation and producing less run-off to the Great Barrier Reef.

The other thing about sunflowers is that they have cultural value, not just agricultural value – they are beautiful!

Just being around them makes you happy. Last year, people were stopping their cars to take selfies with the sunflowers and Mackay photographer Summer Rain got a bit of business shooting wedding and baby photos on Simon’s farm.

In this way, Simon has begun to realise the value of aesthetics. A sugar cane plantation (unlike, say, a grape vineyard) does not ordinarily possess a bucolic aura of romance. It’s a functional, industrial crop. People in Mackay frequently refer to it as the sugar cane industry. This language turns the field into a sort of factory.

So that’s why for the last few years we’ve organised “Sunset



in the Sunflowers”, a gala event for a small group of enthusiastic folks from Mackay to spend an evening swanning around the beautiful yellow nodding heads of the sunflowers, shooting some gorgeous photos, like the one

above. The pay-off (besides the pleasure of the experience itself) is that having the sunflowers there attracts human bodies onto the farm, where they are inevitably prompted to ask the question: “Tell me again, why did you plant

sunflowers in among the sugar cane?”

At this point, you’ve got them! Now a discussion begins about how to farm better for the health of the soil, and who knows where that might lead?



# THE DUNGOG FESTIVAL SHINES THE LIGHT ON A REGIONAL TOWN

*Tracy Norman*

Set among the rolling hills on the southern slopes of the Barrington Tops, with a magical streetscape of heritage buildings including the famous James Theatre, Dungog is the perfect setting for many and varied festivals.

And we have them aplenty throughout the Dungog Shire. There is “Pedalfest”, which sees a large gathering of pedal pushers come to town, there’s a weekend festival of polo and there’s the newly formed Clarence Town Hoedown to name a few. In fact, you’d be hard put to find a weekend without an event happening in the shire. The highlight of the Dungog calendar is the Dungog

Festival of Food, Film and Fresh-air.

The Festival program comprises pretty much what the tagline suggests. We have a full program of feature films, documentaries and short films with 2016 seeing the introduction of an Australian filmmakers competition, with a large prize pool that attracted some really cracking films. There’s some amazing food

events, including the magical mystery tour Long Lazy Lunch, set in a different significant location each year and our Long-table Dinner where around 250 diners take over the main street and dine with a backdrop of Dungog’s stunning buildings, with a dose of starlight for good measure.

Our music program is varied, with street buskers, a free music stage at our twilight markets and some serious funk at the Friday night Settlers’ gig. Past guests have included Tim Rogers, The Pigs, Pseudo Echo, Paul Mac with Ngaire, Meg Mac, the Paperkites and Husky. So there truly is something for everyone in our musical lineup. We also like to showcase some of the wonderful talent that is in our own backyard and really encourage local acts to be included in the Festival lineup.

So, what do we want to achieve from the Dungog Festival? Personally, I think the Festival has done a superb job in helping pull Dungog out of the doldrums, which was caused by the business closure of some major employers and more poignantly, the years of uncertainty surrounding the proposal to build Tillegra Dam. The town was bitterly divided over those who were against the dam and those who saw it as a positive for Dungog. Investment in the town was down, farmers in the precinct were not investing in their farms due to uncertainty about the future or were leaving, having had their property acquired by the local water authority.

The Festival has been a shining light in the aftermath of this situation and also helped focus



the townspeople on the positive after the devastating floods in April 2015. The floods had shattered the community, as we lost three of our own and there was such damage to homes and businesses alike. The Festival helps the community in a number of ways:

It supports local clubs, such as the soccer club, bike club, scouts, and local rural fire brigades by offering cash donations to those that give us assistance with the running of the event.

It brings people into the Shire. One of the main aims of the Dungog Arts Foundation, which is the voluntary board

that produces the Festival, is to showcase the Dungog Shire as a wonderful place to visit 52 weeks of the year.

It's a great way to interact socially. Our volunteers form a real bond with each other and find common ground. Those new to town can get to know others in the community; many a lasting friendship has been formed at the Festival.

It gives those members of the community who are involved a real sense of pride in place. The year of the 2015 flood, world renowned conductor George Ellis was involved in a workshop with both Dungog primary and senior

school students in which they wrote and produced a song about Dungog.

It gives volunteers a chance to learn new skills. Dungog High School students help out with setting up and serving at the Long-table Dinner and also perform at this event. They were also involved with the set up and running of the twilight markets and market stage.

It provides an opportunity for local businesses to showcase what they have to offer and for local growers to showcase their produce. About 75% of produce used in the food events was sourced locally. Our celebrity chef

Christine Manfield was amazed at the quality of local produce, and commented that the beetroots provided by local organic vegetable farmer John Lee were the best she'd ever come across.

The Dungog Arts Foundation is going through some structural change at present. We are considering a move to a different time of the year for the Festival, to fit in better with the film festival calendar. This year we will be producing an out of festival event in the third weekend in May. I like to call this event "A Taste of Dungog Festival". We will be back in full swing, with a full program, in 2018.



Dungog Festival images supplied by Dungog Art Foundation.



# LISTEN TO THE LAND

*Haydn Washington*

When I was 18 this happened to me at the start of the Colo River: I opened my eyes to stare into deep black eyes a few metres away. Fascinated eyes. Eyes of otherness. There was no fear ... none at all. We watched in mutual astonishment at the incredibility of our 'being' ... There was no thought, nothing but the startling desire to hang on to a connection that we knew could not last ...

This was a Lyrebird, and that experience led me to a life of activism and environmental science. Now I could bombard you with facts about the environmental crisis. Rather I want to talk about the land and our bond to it. The land has taught me that we can be custodians of the land, but we do not own it. 'Ownership' is a

Western idea that implies control. The land tells us something very different – if we listen. My favourite phrase is 'If you listen then you will learn'. Indigenous peoples did this and developed lore and law. Luther Standing Bear explains that the Dakota made sure the children knew that wherever they went, they would be greeted

by the warm, reassuring presence of local life-forms, geological features, and natural forces, which were often as trusted, familiar, and communicative with them as members of their families. David Mowaljarlai, a Ngarinyin elder of the Kimberleys writes:

*You go out now, see animals moving, see trees, a river. You are looking at nature and giving it your full attention, seeing all its beauty. Your vision has opened and you start learning now. [...] These things recognise you. They give their wisdom and their understanding to you when you come close to them.*

I call this 'a sense of wonder' at nature. Miriam-Rose Ungunmerr explains that there is a word 'dadirri' which is 'something like what you (white people) call contemplation'. Dadirri recognizes the deep spring that is inside us. We call on it and it calls to us. This is part of the sense of

wonder, part of the empathy that allows us to feel the sense of wonder. Miriam-Rose believes that the gift of Dadirri is 'perhaps the greatest gift we can give to our fellow Australians'.

Now I am an environmental scientist who has written on many issues, including 'sustainability', but look out over there over the Wollemi National Park and wilderness. THIS is the heart of sustainability. A living world, a harmony of lives, of which we are a part. If we do not keep our wilderness, our large natural areas, then there will be an even worse cascade of extinctions than what we face. But we face a number of key barriers holding us back from a meaningfully sustainable future:

A modernist worldview, that sees all that as just a 'thing', a machine. Rather than these being our brothers and sisters they have become a 'resource' for human

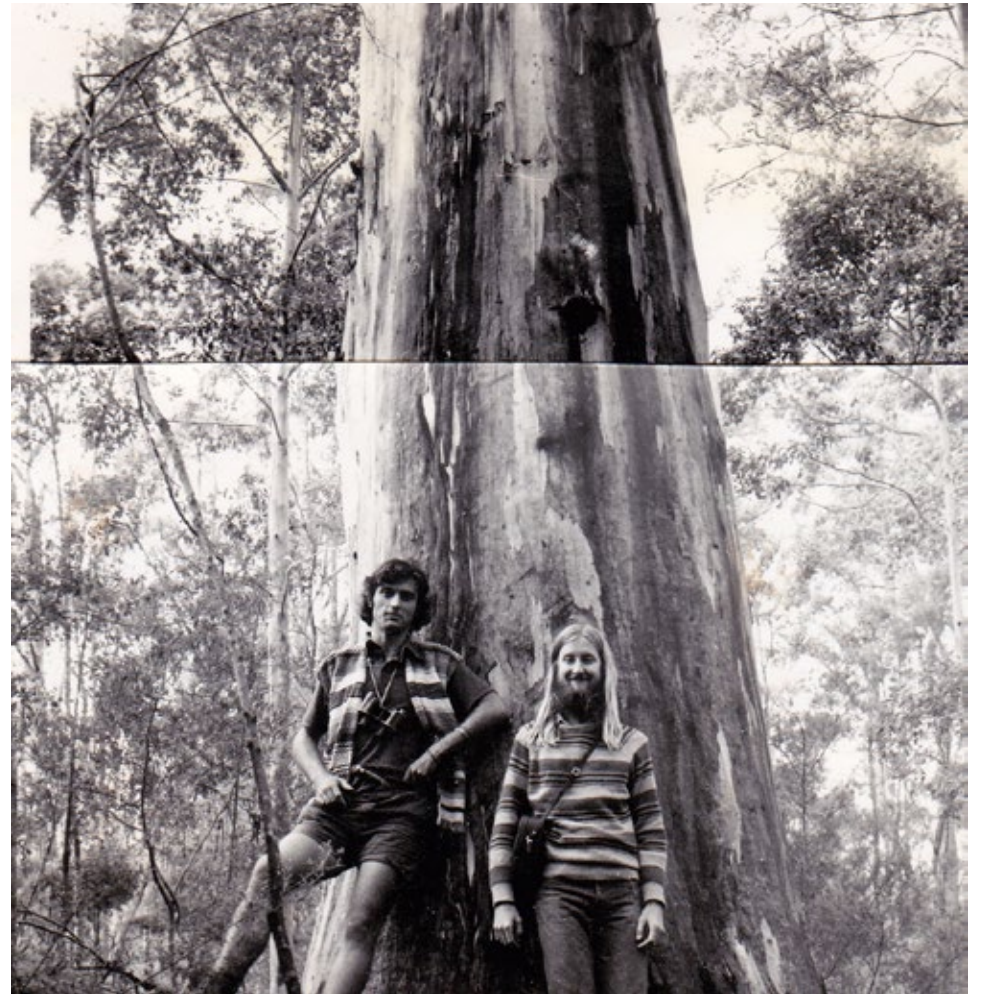


use, something humans own. This is anthropocentrism, the idea that the world revolves around humans. It ascribes no rights to nature, only to humans. It is also leading us to disaster.

The endless growth myth. On a finite planet can we keep growing forever? A child can tell you the reality – no! Yet our society and our economy is based on this insanity. Every day we are exhorted to grow more as in ‘jobs and growth’. But endless growth is the cause of the environmental crisis, we cannot grow our way out of it, it just makes things worse.

Denial- are we Homo sapiens or Homo denialensis? Many of us are so good at denying reality and believing what we want to. However dialogue beats denial, if we allow it. That means we have to talk about drivers of unsustainability – overpopulation, overconsumption and the growth economy.

I don't think we will solve the environmental crisis without rejuvenating our sense of wonder at nature. This gives us the deep belief to make the difficult decisions needed. Respect and listening to the land, empathy, Dadirri – these offer us a sense of perspective, of humility. We are brothers and sisters and cousins to this land, not its masters. So return to those three barriers. Well - if we listen to the land we develop an eco-centric worldview, where we are part of nature. That means nature has intrinsic value and ‘rights’ of its own. Nothing in nature grows forever, so nature shows us that endless growth is impossible, unethical and indeed actually insane. Nature is a patient teacher too, we don't create nature, it creates us. So listening helps us to break through our denial. The land, and our bond with it, is thus central to reaching a sustainable future. Join me in listening ... and acting!



Haydn Washington and Roger Green from the Colo Committee in front of a giant Bluegum at Mountain Lagoon in Wollemi National Park, around 1975.



At *Futurelands2*, local elders Lyn Syme and Kevin Williams proposed that our gathering should make a gesture of solidarity with the Standing Rock Sioux tribe in North Dakota, USA. The people of Standing Rock are fighting against the development of the Dakota Access Oil Pipeline which constitutes a serious threat to the region's clean water and to ancient burial grounds.







# THE FORAGERS' FEAST

*Diego Bonetto in collaboration with Alfie's Kitchen*

It is outrageous how much of our modern life has divorced itself from interspecies exchange.

We live in sanitised, defined environments where we assume control, or try to. In my work I propose a reshuffle. I present the audience with possible relationships of sustenance, where the plants that inhabit our anthropocentric environs acquire once again the role they always had: our food and medicine.

I bring old stories back to the table. I work with chefs because I am convinced of the infallible avenues of taste and reward to

open up possible nourishing solutions. I work with farmers, gardeners and bush regenerators in order to rescue the waste that is produced by our industrial agriculture and environmental conservation processes, and devise marketing possibilities that can return pioneer plants to their role as allies.

In our attempt to deny impact we prevent adaptation. I believe that through convivial arguments we can show how biologically sustainable economic possibilities can be harnessed, thanks to a renewed appreciation of otherwise wasted resources: weeds.

*In our attempt to deny impact we prevent adaptation.*



Joey Astorga of Alfie's Kitchen. Photo by Lucas Ihlein.



Diego Bonetto, Alice Wood and Belinda Innes forage at the Clandulla property of Belinda Innes and Dan Kilminster.

How about we go for a walk and collect plants? We can easily harvest enough produce within one square kilometre to feed 200 people! And so we did. However radical this might seem, we put into practice something that was utterly commonplace up to a few generations ago. To feed ourselves with what the land is giving us. To commune with place and season in such a way that the air that we breathe is the same air that sustains our food; the rain that is running in our rain tanks is the same rain that fed the plants

that feed us; the sun that is warming our skin is the same sun that is giving life to everything around us. And ourselves in turn.

We went by the local river and collected cumbungi (Typha) and served it in a slaw. We went behind the shed and collected nettle (urtica) and made focaccia with it. And we collected plenty more, like wild asparagus shoots from the roadsides, flatweed greens in the lawns, salsify roots by the ditch, wild mustard flowers in the fields, plantain seed heads from the garden, wild fennel

fronds and robinia flowers along the train line. So much. None of which was cultivated, just nature's gifts for us to enjoy and remind ourselves that we too are a product of the land. We come from it, we gather our sustenance from it, we will go back to it.

Be and let it be, as it has always been.

It was a sumptuous dinner. Guests raved about it and were surprised that so many plants that we overlook in our surroundings are actually exquisite foods. The dinner asked an obvious question:

why are we not taking advantage of nature's offerings more? Customers are ready for a revival of long forgotten wild treats, so much that a growing market is shaping. A market driven by that necessity to reconsider what is waste in our production industry, to turn it into by-product of high nutritional value.

Farmers and gardeners: withhold your slashers! Let's work together to promote a new understanding of abundance.

## RECIPE: CUMBUNGI SLAW

- 100g purple cabbage slaw
- 1/2 small onion shaved
- 1 bunch dill chopped
- 1 bunch parsley chopped
- 1 green apple shaved
- 400g young shoots of cumbungi finely sliced
- 100g thick aioli
- 50ml sherry vinegar
- 1 clove garlic crushed
- 10g sea salt flakes
- 1tsp seeded mustard

1. Mix together garlic, onion, mustard, aioli, vinegar and herbs to make dressing.
2. Toss cabbage, cumbungi and apple together in a bowl.
3. Mix through dressing and serve.



Cumbungi Slaw.

## RECIPE: STINGING NETTLE FOCACCIA

310ml warm water  
7g (2tsp) dried yeast  
7g (2tsp) caster sugar  
100ml extra virgin olive oil  
450g plain flour  
500g nettle leaves  
7g (2tsp) sea salt flakes  
Fresh rosemary leaves

1. Mix all dry ingredients in a bowl, make a well and slowly incorporate water.
2. Turn out onto floured surface and knead gently for 5 minutes.
3. Put dough into a bowl with a little olive oil, cover with a clean tea towel and leave in a warm place (around 30 degrees on top

- of oven) for one hour.
4. Wearing sturdy gardening gloves, use tongs and scissors to pick nettle leaves. Be very careful to not touch any part of the plant.
5. Wash nettle, then blanch in salty water cool remove any stalks and roughly chop.
6. Knead back the dough add the blanched nettle and let rise again for another hour.
7. Roll out dough to desired thickness.
8. Let rest for half hour.
9. Bake at 200 degrees for 10 minutes then 160 for another five minutes.
10. Let cool for five minutes on tray, brush with a generous amount of olive oil and a final sprinkle of sea salt then transfer to wire cooling rack.



Stinging Nettle focaccia.



## FORAGED INGREDIENTS:

### 1. Flatweed - *Hypochoeris radicata*

Naturalised to Australia. Common weed of disturbed land, pastures and gardens. It is an important wild food source of the Mediterranean basin.

### 2. Herb Robert- *Geranium spp*

Occasional garden escape. Much respected herbal medicine for its astringent properties.

### 3. Cumbungi (Bull Rush) - *Typha spp*

Native to Australia, cosmopolitan. One of the oldest source of food on record, rich in starch and easily harvested. Found in ponds, dams and along waterways.

### 4. Wild Fennel - *Foeniculum vulgare*

Naturalised to Australia, commonly found along roadways, railways and in disturbed land. Celebrated food and medicine throughout the world. Harvested commercially in India and The Middle East.

### 5. Robinia Flowers - *Robinia pseudo-acacia*

Naturalised to Australia. Commonly found in disturbed land. Nitrogen fixer. Much celebrated for its timber, as it is extremely hardy and pest resistant. The edible flowers are a seasonal treat in France.

### 6. Stinging Nettle - *Urtica spp*

Naturalised to Australia. Commonly found in areas rich in nitrogen, like close to animal shelters or roosts. Extremely nutritious, used for food, medicine and as a source of fibre.

### 7. Wild Mustard Flowers - *Brassica spp*

Naturalised to Australia. The brassica family is one of the most important food families, (canola, cabbage, kale, mustard, broccoli, etc) and also one of the most important weeds of agriculture. Found all over the world, including your backyard.

### 8. Plantain - *Plantago lanceolata*

Naturalised to Australia. Extremely important medicine plant in both Eastern and Western herbalism. The seed heads and seeds are edible and quite beneficial for the quality of the fibre.

### 9. Salsify - *Tragopogon spp*

Naturalised to Australia. One of the most expensive items of wild produce on the market. Commonly harvested for the edible root, here in Kandos it grows proficiently along edges of paddocks and roads.

# THE HEMP INITIATIVE

*Gilbert Grace – with thanks to Klara Marosszeky*



The project got underway when I purchased a bamboo bicycle kit online that could serve as a prototype (I used hemp twine in its construction). It attracts a lot of attention and admiration: I am constantly engaged in conversation as to its origin and manufacture.

I became acquainted with Singgih Susilo Kartono, through Ali Crosby, head of a design cluster at UTS. Singgih is a global award winning Indonesian designer, based in Java, who, with his partner and spouse Tri, returned to Singgih's village to establish a design practice based on social justice and sustainability at the village scale. Singgih has stated that he uses the allure of the bamboo bicycle, 'Spedagi', to attract people to his larger and more ambitious project, the International Conference on Village Revitalisation. The ICVR is a global initiative that alternates venues between international destinations and his home village.

I was pleased to assist Singgih with his "bamboo bike hack" during Sydney Design in September 2016. Congruent with his design philosophy, participants were offered locally sourced materials with which to remanufacture bicycle frames. I also toured Singgih around the Sydney Green Ring, and at Callan Park assessed the giant bamboo for bike frame suitability.

The hemp licensing process is a more bureaucratically treacherous and obstacle-ridden route than any of us anticipated, and at the time of writing there is still no hemp crop in the ground at Marloo. In the meantime we have been learning about hemp's many applications. In early 2016 I participated in a two day hempcrete workshop in Sydney's



Northern Beaches, led by Klara Marosszeky.

Hempcrete is made from a mixture of hemp hurds (the crushed inner stalk of the industrial hemp plant) and a lime binder. The damp mix is poured into formwork and lightly compressed. When fully cured it is breathable, as well as water, rot and fire resistant. It has many advantages: it is approximately one sixth the weight of concrete, is easy to handle and provides excellent thermal and sound insulation. Historically, hemp's use as a filler for a lime based building predates cement and concrete.

The hempcrete is still very friable when first formed: the lime binder absorbs carbon from the atmosphere and calcifies, as the lime wants to return to the solid rock state of limestone. This process takes many years, absorbing up to 60% of the carbon used in the production of the lime. This means that not only does hemp sequester carbon during its growth cycle, it continues to sequester carbon through this mineralisation process.

In October/November 2016, just prior to *Futurelands2*, we constructed the hempcrete wall



Gilbert Grace and Eloise Lindeback. Photos by Laura Fisher.

– a ceremonial or "Commemorative Gate" - in Angus Avenue, Kandos. Various oxides were added to layers of hempcrete replicating the layered sedimentary rock seen in the Coomber

Mellon Range beyond. The word 'cementa' was set in relief using precut ply blocks – according to Klara, this embedded lettering technique is a first in hempcrete construction.

# HOW HEMP HAS BEEN WRITTEN OUT OF HISTORY

Gilbert Grace

Hemp was one of the first plants to be cultivated by humans. You won't find reports of it in the mainstream western press because it has been thoroughly demonised by global corporate economic interests keen to maintain their market share. The truth is that without hemp we would not have the world we know today. Hemp has over 25,000 recognised industrial applications and with the development of new technologies, so much more potential to be explored.

## HEMP WAS TO THE ERA OF SAIL WHAT OIL IS TO THE ERA OF THE MACHINE

Originating in the Himalayas, hemp has unique properties that were sought out by humans. The oldest archaeological evidence (10 000 years) is of woven cloth from Taiwan. There is evidence that the Vikings had hemp sail and cordage, and grew and used hemp in their decorative weaving.

The expansion of the Ottoman Empire cut off the overland trade route to the Far East, spurring 'The Age of Discovery'. Colonial expansion and the development of oceanic trade routes by the Spanish and Portuguese was only made possible by hemp sail cordage and cloth for uniforms. The Spanish and Portuguese adapted fishing boats to create the Carrack and Caravel, leading to global navigation and trade and the rise of an export boat building industry.

The creation of Dutch and British trading empires came about through hemp. Britain's rise to colonial power came about through the monopolisation of the Russian hemp export trade. The trade in 'naval supplies' was threatened many times by various forces along the Baltic Trade Route, and Britain and the Netherlands were exposed to domination by the Russians and did not have land enough to grow hemp.

**THE VERY USEFUL INDUSTRIAL HEMP**  
Hemp cultivation requires no chemicals, pesticides or herbicides. (with over 50,000 different uses...)

**HEMP SEEDS** (Harvest) → Intermediate processing → **HEMP STALKS**

**HEMP SEEDS** (HULLING / PRESSING / CRUSHING):

- HEMP MEAT** (Food, Dairy products)
- HEMP SHELL** (Flour, Bakery Products)
- HEMP OIL** (Personal Care Products, Cooking Oil, Fuel / Paint)
- HEMP CAKE** (Food, Beer, Feed)

**HEMP STALKS** (DECORTICATING):

- HEMP FIBER** (Hacking / Scutching):
  - PRIMARY (line) Fiber: Fabric, Insulation, Carpeting, Paneling
  - SECONDARY: Cordage, Pulp, Recycling Additive
  - TOW: Cordage, Bagging, Fiber Board
- HEMP HURDS** (Scutching):
  - Fiber board, Compost, Mortar, Paper filler, Absorbent bedding, Chemical feedstocks (Plastics / Paint / Sealant)

**HEMP IS A RESOURCE**  
20 years for trees to mature vs 4 months for hemp.  
Hemp can yield 3-8 dry tons of fiber per acre, FOUR times what an average forest can yield.

Paper, fertilizers, soil nutrients and animal bedding can be made from leftover waste when processing hemp. This means all parts of the plant are being used, or put back into the earth.

Anything made out of cotton, timber or petroleum can be made out of hemp. Hemp fiber is the strongest natural fiber in the world. Hemp hurds can be cleanly converted into Gasoline! (Through a heat process called PYROLYSIS, Hemp Biomass can also make Ethanol, Methanol & Methane Gas)

Designed by Real Hemp LLC, A wholly owned subsidiary of Stevia Corp. dedicated to the socially responsible growth, harvest, processing and distribution of the highest quality hemp products available. [www.realhemp.com](http://www.realhemp.com).



Klara Marosszeczy speaking at Marloo during Futurelands2.



Britain offered bounty to its colonists in America to supply raw hemp, and was at the same time attempting to colonise Ireland and India.

Having lost America during the War of Independence, Australia became Britain's next colonial conquest. Early farmers in the Sydney region were supplied with hemp seed. It was the emancipated convict and later police magistrate Andrew Thompson who raised a successful crop of hemp at 'Green Hills', a property located in what is now called Windsor.

The invention of the cotton gin in 1792 and the expansion of slavery turned the tide in favour of cotton. Inferior in strength to hemp and flax, it was originally more expensive than hemp to produce but the mechanisation of manufacture dropped its price significantly. The process of decortication, used in hemp and flax, required 'retting' the cut stalks so that the fibre and stalk could be separated. The fibre was beaten, and combed, by hand - a labour intensive and time consuming process.

A mechanised decorticator was invented in the 1920s that could have revived the hemp industry in America. Instead it suffered from lack of investment. Some claim that a conspiracy existed with entrenched interests in oil refining and distribution, chemical manufacturing, and steel intent on burying the hemp industry.

## ART CONSERVATORS KNOW THE VALUE OF HEMP

As to the ubiquity of hemp fabric the proof is not in the story books of 'stoners' but within the dry and fusty manuals of art conservators whose business it is to know the composition of priceless artefacts and antiquities. Up until the 1820s, 90% of all cloth was made from hemp. Up until the 1880s, 90% of all paper was made from hemp rag.

## THE ECOLOGICAL BENEFITS OF CULTIVATING HEMP

Hemp's value as a crop historically (the last ten thousand years), and potentially in the future, is attributable to a combination of

factors. Hemp can be grown in the same plot of land without degrading the soil, and without expensive petrochemical additives such as fertilizers, pesticides and herbicides. This makes hemp a viable and profitable alternative to many crops.

## GROW YOUR OWN FUEL

Hemp can be used to produce fuel that is less polluting than mineral 'rock' oil. The seeds can be pressed to produce an oil that goes into bio-diesel production without the sulphur content and particulate hazard of petrochemical diesel. The biomass can be used to create methane (CSG is another form of methane with toxic by-products) and/or ethanol. The biomass can be burned to produce heat. Hemp is also suitable for charcoal production. All the fuel needs of the farmer can be grown and processed collectively in co-ops or combines, lessening dependence on foreign oil imports.

## GROW YOUR OWN MEDICINES

Hemp oil can be extracted from raw hemp through distillation in alcohol, making it suitable for use by those in need of its particular beneficial effects. The reason hemp is illegal today is that Harry Anslinger was so adroit at manipulating the American legal system to have it enshrined in law that hemp has no medicinal benefits. Up until its prohibition in 1937, tinctures and extracts of cannabis was used to treat a number of symptoms and diseases. The American Medical Association fought to prevent the criminalisation of hemp/cannabis because of its beneficial properties. As Deitch has documented "the AMA had discovered only two days earlier that the 'drug' (marijuana) Congress was considering outlawing was known by the medical profession as Cannabis, a medicine that they had safely prescribed for numerous ailments for more than a hundred years."

## CRITIQUE OF THE LEGISLATION

Australia and New Zealand are the only countries in the world



Hempcrete block. Photo: Scott Lewis (creative commons).



Part of a hemp rope fence constructed at the Eden Project, Cornwall, UK. Photo: Bob Franklin (creative commons).



The Be.e electric scooter is made of 90% hemp fibre, 10% flax fibre and glue. Designed by Waarmakers for Van.Eko <http://www.vaneko.com/the-be-e/>

where hemp cannot be consumed for food. Recent attempts to legalise hemp for food in Australia have been thwarted because of "the message it would send" or because it would "affect police breathalysers". Reported and verified cannabis psychosis is less of a danger than anaphylactic shock brought on by bee stings, eating peanut butter, or shell fish. The

hysteria of Harry Anslinger and William Randolph Hearst has been employed for the same reasons, to link benign and valuable industrial hemp to drug trafficking. There are no verified deaths resulting from cannabis, but there are thousands of deaths a year from each of the recognised, regulated and legal competitors for the markets hemp was forced out of.

# ABORIGINAL CULTURE AND BURNING

Larry Towney and Michelle Hines

Aboriginal people play a significant part in the Australian landscape in traditional culture. In the pre-colonised social structure the lines were very clear in the way Aboriginal people managed their business. As shown in Keith Goldsworthy's image, there was a place for everything and everything had its place.

We had our sacred objects, social control, totemic sites, social organisation, languages and territorial rights that dispel the myth that Aboriginal people were nomadic. We did not wander aimlessly without any purpose in life in traditional time as some people suggests. We practiced territorial rights and those rights were developed and built on respect. This respect could also be measured in our languages, when we spoke to each other in the most respectful way: "Yamadhu marung" (are you well) for example.

We traded, we harvested and we had industries, including stone quarries, grinding grooves, eel and fish traps, cultural burning methodology. The evidence is very clear due to the fact that when the



country was first colonized they found and reported that the country was in pristine condition. This proves that the Aboriginal people were very good and experienced land managers. As Bill Gammage noted in his book *The Biggest Estate on Earth*: "The Aboriginal people managed the country in a far more systematic and scientific way than realised."

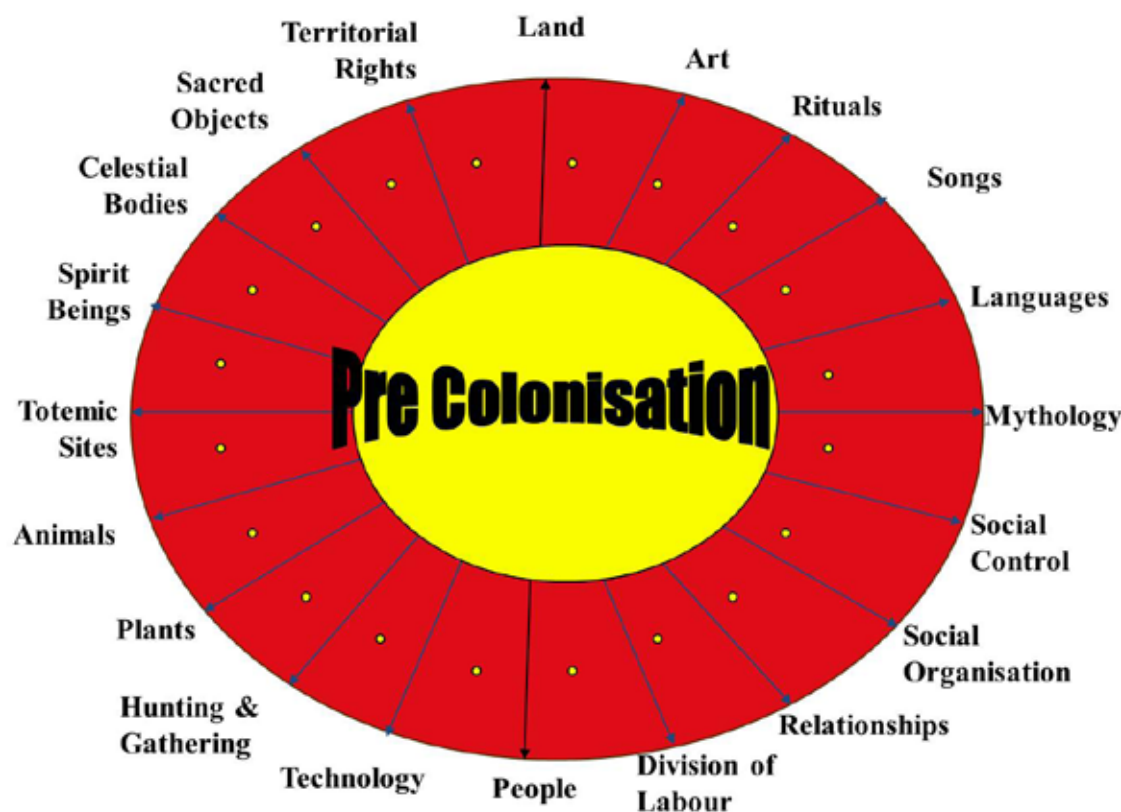
Aboriginal men played a very important role and were considered the Genesis (beginning or origin) and the source of life in the traditional social structure. In our songlines there were no reports of Aboriginal people starving to death or getting lost in the outback. This was our own backyard where the traditional people were very clever in looking after

and balancing the ecology and the aquatic eco-systems as well. Our education system was one that involved repetitious learning in which all involved graduated.

Fire is an important and spiritual part of Aboriginal culture and was integrated into many aspects of life. Fire is also an important part of the Australian landscape, with much of our native flora and fauna adapted to survive fires. Indeed, many species rely on appropriate fire to keep them healthy and regenerating.

Post colonisation, Aboriginal people's lifestyles changed with movements towards communities, towns and settlements. The practice of burning largely ceased and cultural knowledge about burning is being lost as the older generations who hold the 'know how' are passing away before the knowledge can be recorded or passed on to the younger generations.

Since 2010 the Central Tablelands Local Lands Services (previously known as the Lachlan CMA) has been actively delivering a cultural burning project currently funded by the Australian Government's National Landcare Program and the State Government's Catchment Action funding. The focus of this project is: to help



The Dreaming is the basis of all aspects of life in traditional Aboriginal societies. Design layout: Keith Goldsworthy.

the Aboriginal community to link back to culture and rediscover fire knowledge, skills and values and to enhance perennial native grasses, vegetation and biodiversity through the application of cultural burning practices. The partnerships established between the Central Tablelands LLS and the NSW Rural Fire Services, Aboriginal community groups such as Orange LALC and private and public land managers have been

vital to the ongoing success, and the real strength of this project.

Cultural burning uses a cool fire lit using point ignition techniques. It occurs at the right time of year for the particular type of landscape, vegetation type or species. The fire is managed in conditions that ensure the flame height stays very low and does not ever burn the canopy of the trees. The fire moves very slowly through the area, allowing animals and

insects time to escape the flames and survive the fire in patches that do not burn. Not all the area is burnt, with the end result being a mosaic of burnt and unburnt country. This leaves refuge areas for animals and plants to survive and regenerate quickly after the fire.

Country can be managed using cultural burning for a vast number of reasons. These include promoting native grass to help control

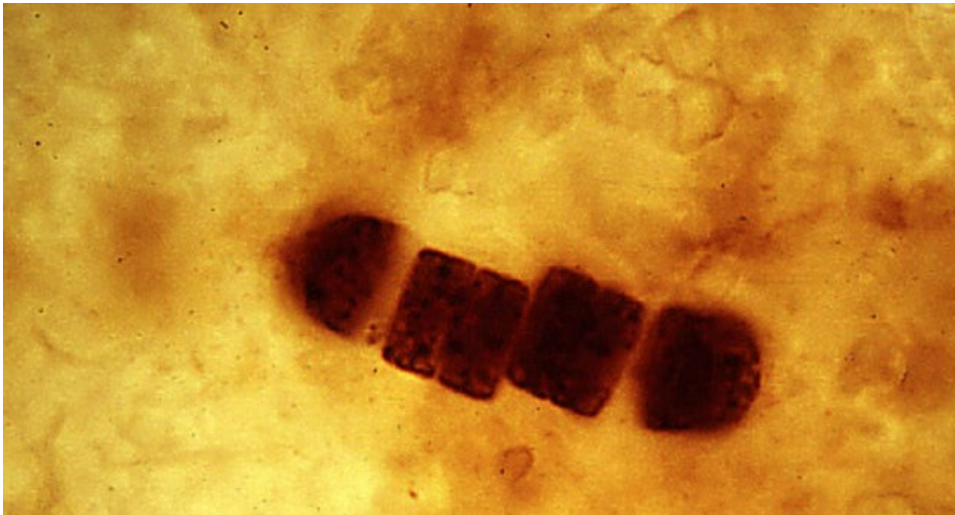
weeds, promoting perennial grasses, promoting the seeding of grasses for animals such as birds, managing food resources for certain animals, managing for cultural plants or 'bush tucker', promoting a diverse range of plants, helping certain plants (grasses, trees, shrubs) regenerate, and protecting areas from wildfire by reducing fuel loads and maintaining green active vegetation.



Larry Towney conducting a burn at Lake Cowal, north of West Wyalong, 2014.

# CREATION AND ACTION

Jason Tuckwell



These cyanobacteria fossils are approximately 850 million years old.  
Photo: J. William Schopf.



We've become very familiar with the concepts of innovation and creativity, particularly around the sorts of unprecedented novelties that technology is introducing into our lives. But what does this turn toward creativity tell us? And more importantly, how can this help us to understand how modern human industry relates to the natural world, when it seems to be on the cusp of slipping into a destructive imbalance?

In order to examine this, I'd like to raise three points. First, that the return to the concept of creativity belies a certain tension with the earlier idea of originality. Secondly, that we can better understand art and technology as a skill, know-how. And finally, I want to consider whether skill - knowing how to do things - belongs to all living things. That is to say, I think we need to broaden our idea of what is artificial to see that it is a primitive part of natural processes.

To begin, creation and originality are like two dynamic, opposing forces in a state of tension. The origin is the first, what everything has in common while the creative is a particular that differentiates. More precisely, the origin promises us a first, but we only perceive a pattern; things come into being, I plant a seed and it grows into a tree, it fruits and dies. I know then my seed came from a previous tree and it from a more original one; Darwinian evolution and modern

cosmology outline for us such complex patterns of emergence from an origin, just as the creation stories of many cultures did before them.

As such, we might *think* that creation is what causes the origin, but all we know for sure is that it is a kind of work that intelligent agents perform. Creativity is first an intention, a desire to create. What it wants to create is a difference in the world. A craftswoman cuts down a tree and she shapes it into a pedestal. What here is creative is not only then the intention to create, but making this intention real; it is the work that makes a change in the world - it is the chiseling of the wood that makes the difference. Creativity then works upon what is original. It is in this sense that creativity and what is original, cannot be the same.

What I specifically want to argue is that this tension between originality and creativity is of the order of natural processes; that is, the tension is between whatever brings something into the world, and what determines how it will act, what actions it will perform. Let me start with the more familiar context for creative practice, with the work of art. If the work of art is not a picture, art object or something in an art gallery, it is rather because it is an older idea of art, something artificial, something that isn't natural, whatever it is that distinguishes human beings from all other natural life. The

Greeks called this idea of art *techné*, and it means technical skill, a practical knowledge or 'know-how'; it is to know how something works and to use this as the basis for a specific action, intended to produce a particular outcome.

Now, each human industry has its specific technical skills: an industrial engineer knows how turbulence works and uses this to shape the blades of a turbine; a farmer knows her crop's sensitivity to temperature and moisture and irrigates accordingly - it is in this sense that all human disciplines remain arts.

As such, it is only by way of creativity that this learned, skillful work can introduce differences in original conditions - this is why each discipline is not given and innate but develops by innovations, each creative in its own way. It is also why each of us are different, that we are not defined solely by our original conditions, our genetic make-up, our race or ethnicity - we also come to be shaped by the choices we make, the actions we perform. I will add that this idea of art as technical skill can make clearer sense of fine and contemporary art, if we understand that these are the disciplines that not only make use of this kind of work, but study creative practices as their special focus. We have seen such examples at *Futurelands2* where artists are applying their creative methods beyond the art gallery, working upon the spheres of

political activity, in the community, or on the farm.

If this propensity for technical skill defines us quite apart from the origin of our species, it is because it is this power to alter natural processes that made it possible for us to evolve from dwelling in caves to building houses, to transform grunts and cries into communicative language, and that marks a primitive separation from nature by accounting for all of our artificial, technological and constructive interventions upon the world. This is the work creativity makes possible; it is an action upon something that originally is, in order to create from it something else.

And if this practical know-how is thus not given by our original nature, we might inquire whether this ability belongs exclusively to humans. I will argue that human know-how is a special case of a simpler and more generic arrangement, with a far longer evolutionary history.

Now, I'm not suggesting that other living things can reason and think, which would be to understand the consequences of their actions. If we are honest, most of the time, neither do we. I just want to argue that 'know-how' is the practical capacity to sense one's environment and act accordingly; it is highly unlikely a plant 'knows' what the sun is, but it nevertheless not only senses the sunlight, it acts continuously to change its form to maximize its exposure to it.

Arguably, this activity is evident very early in evolutionary processes. Consider *cyanobacteria*, one of the earliest and simplest life forms, but remarkable because they performed a function that was critical for the complex diversity of life - namely the process of *photosynthesis*. That is to say, Earth's oxygen is not a product of ordinary processes, but of countless primitive life-forms, generated by

their active output over a billion years. To wit, it was this activity of photosynthesis that *created* the vast diversity of complex life forms that populate our planet - without them, Earth's original, natural processes would not have been sufficient.

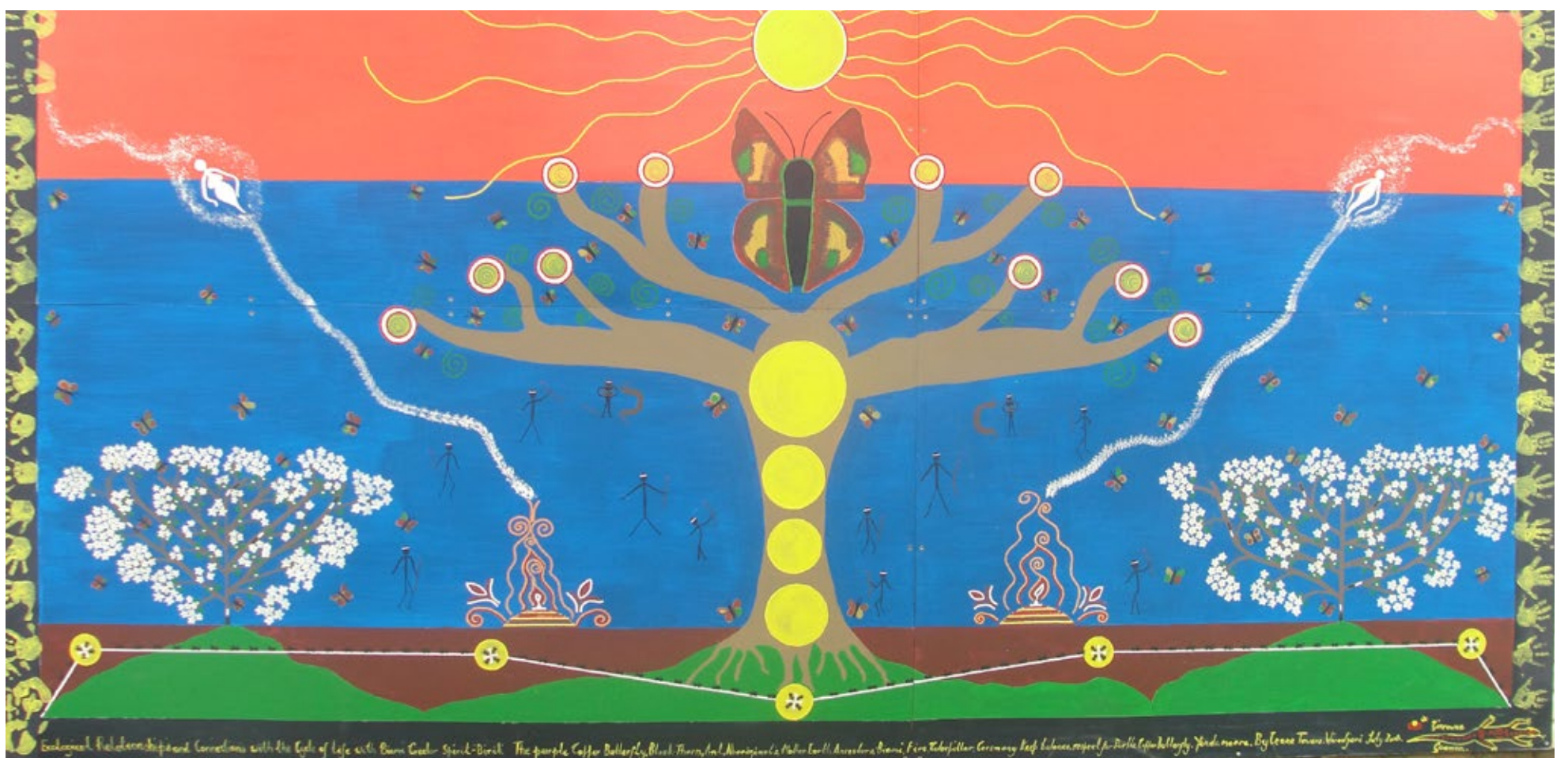
Finally, it is this creative practice - the power to act and affect - that links the work of countless numbers of cyanobacteria to the billions of human

beings now changing again the composition of the atmosphere through a vastly accelerated technique; our sophisticated creation of machines. Perhaps our climate crisis suggests there is a somewhat urgent imperative to understand how artificial creation operates in a tension with original nature. This is because the denial of climate change turns upon our age-old inability to relate technology and human

activity *with* nature; it is why, on the one hand, we sometimes suspect our actions might be futile or that art is superfluous, and on the other, why we think that technology is a corruption of the natural. If we understand creation as the actions of the living, tasked with introducing differences into natural processes, this might help us rethink the relations between ourselves and the living species with which we share the world.

# PURPLE COPPER BUTTERFLY

*Ceane Towers*



This mural was commissioned for Blinky Bill Preschool, Portland. It was created by Ceane Towers with the support of Ngroo Education (Inclusive Education) and the Australian Government. The mural is located on the wall of the Old Fire Station, which is next door to the Preschool.

This mural is 4 metres by 2 metres in size. It tells the story of the Purple Copper Butterfly, a species of the Greater Lithgow wider area going on to Oberon and Bathurst, 900 metres above sea level. It is a unique narrative of reincarnation; a dream time story, the Jurkurpa of the relationship between the black thorn bush and the butterfly caterpillars, who rely upon it as their only source of food. This plant is being destroyed today. Fire encourages the plant's re-growth, but only small, slow, low burns, the kind that don't happen any more. The ants of this region

protect the caterpillar by taking the small caterpillar to the ants' nest during the day, and taking the caterpillar back to the plant at night. The caterpillar then goes into its cocoon, and metamorphoses into a beautiful Purple Copper utterfly. The Purple Copper Butterfly is the example of reincarnation when it spreads its wings and flies after metamorphosis.

The butterfly has a relationship with Baiami and other living ecology, so the cycle of life and death continues. This is what a healthy ecology looks like. It is the balance of the cycle of life and

recreation. It is an example of the lore of the lands. This healthy ecology is being destroyed, and this means the Purple Copper Butterfly will potentially become extinct. Australia is not being managed the way it should be, and therefore it is suffering. Green is the way. Roots, mother nature, father sky, healthy relationships. When such species look like they will disappear, we should respond and modify our approaches to management on Country. But we don't see the people swimming naked till the waves go out. Often it is too late then.

This painting is about Aboriginal Spirituality. Respecting Creation. Walking with Respect - Yindamarra. This painting is an example of how we need to change our whole culture to suit ecology again like it once was. Walking softly on Country and leaving hardly a foot print. Using fire carefully to regenerate the natural resources on Country. We need to change our culture. We should live in bush time and with the seasons and winds of change, not by the clock! Daddirri (Deep Listening).

- *Ceane Towers, Wiradjuri, Darug and Gamilori woman*

# TRAVELLING STOCK ROUTES

*Genevieve Murray, Kevin Williams,  
Lyn Syme and Joni Taylor*

## FUTURE ACTS AND 21ST CENTURY INDIGENOUS LANDSCAPES - ULAN BY GENEVIEVE MURRAY

On the road into Ulan a small parcel of fenced land sits under some power lines and is bordered by a small creek, a train line, and the main road into town. Today it looks like a wasteland. If you were a drone and lifted into the sky, you'd see three large mines surrounding the site.

This parcel of land is a Travelling Stock Reserve (TSR) Like many TSRs this land runs along a river with flat sandy soil that's good for camping, but unusually, in this case a lot of development has occurred around it without it being sold off or leased to a land owner.

We were invited to survey the site by Kevin Williams and Lyn Syme after meeting them at *Futurelands2*. So in early January 2017 we travelled north along the inside of the Great Dividing Range from Lithgow, past Kandos and Ganguddy, turning east and heading further north till we reached Ulan. Over three days we walked the site, recording what we found.

Almost at every footstep along a seam of eroded earth adjacent to the creek, Kevin stopped, bent down, picked up, dusted off and showed us Aboriginal stone tools and artefacts. We found more than 50, not buried deep in the ground but sitting pretty in the dirt, visible with the naked eye. We marked each location, photographed them, made some 3D models of them and returned each of them to its original location.

The find was not unusual for the area, we later found out. Just up the hill, inside a small brick building called 'The Keeping Place', lie hundreds of bags with similar artefacts in them. 'The Keeping Place' is the designated, locked and off-limits room built by the mines to house the artefacts found on similar surveys

undertaken as part of their obligations to the North East Wiradjuri Native Title Group (NEWNTG).

Our research is significant in establishing quantitative evidence to support the relationship between Travelling Stock Reserves and traditional Indigenous pathways and sites of occupation. However, what it revealed to us was the disturbing reality of how Native Title Legislation gets played out to the advantage of mining companies. It doesn't deliver empowerment and a sense of sovereignty to traditional owners - it pits them against powerful and monied mining negotiators.

According to Maeve Parker (a lawyer working with artists on Future Act), "a Future Act is an act dealing with land or waters which might affect Native Title. Examples of Future Acts are proposals to mine and exploratory licenses. They are particularly common in relation to mining as both the state and federal government retain the rights to certain minerals and resources below the surface of land despite any other interests. Future Acts are significant as they cause Native Title to be wholly or partially extinguished. Therefore, for a Future Act to come into play, there must be a Native Title claim over the area of land (either presently lodged or filed in response to the future act), and a proposed use of it by another party that may affect that interest. Future Acts trigger procedural rights, including the right to negotiate or the right be notified of developments. Frequently though, they offer no substantial protections to native title applicants. This is often because the complex future act procedures are not understood, implemented or enforced properly by governments and third parties."



Top: Stone tool, Bottom: Entrance to TSR. Photos by Sean Crowley.

## ULAN VILLAGE: MINING IMPACTS ON COMMUNITY AND LANDSCAPE BY KEVIN WILLIAMS

Ulan is an area that shows strong evidence of Aboriginal occupation and cultural activity.

Ulan Mine (owned by White Industries and later transferred to Glencore) is one of three mines operating within a 10km radius of Ulan, contributing to the cumulative impacts in the area. Open cut mining began in the early 1980s with the Goulburn River diverted around the mine site from just below Ulan village. This diversion has had attendant impacts, both visual and environmental, notably on the Aboriginal cultural landscape.

In our time of residence at Ulan in the mid-2000s there was a close-knit community with the pub as the social hub of the village. No miners lived in Ulan.

This sense of community came out of an historical past when people could trace their links to the area and each other. Dances used to be held on Saturday nights in the community hall opposite the pub on the original road down through to the Hunter Valley (via the old Ulan mine). This aspect of the social life was changed irrevocably when Ulan mine obtained the property rights to the hall and demolished the building.

Wilpinjong (Peabody Mining) began a negotiation process with the North East Wiradjuri Company in 1995 to obtain planning approval for the mine to proceed. The original proposal was for a mine lifetime of 21 years, yet with subsequent authorised mine plan amendments, that time frame has blown out to 30 years. This increased time frame has all the impacts discussed earlier around the Ulan mine, yet on a larger scale.



Lyn Syme and Kevin Williams at *Futurelands2*.

## NEW LANDSCAPES INSTITUTE BY JONI TAYLOR

*Future Act* by Future Method Studio has been commissioned by the New Landscapes Institute as part of “The Long Paddock” project. The New Landscapes Institute is collaborating on this long term project with artists, architects and designers and explores the significance and future of Travelling Stock Routes, both here and internationally. “The Long Paddock” is curated by Joni Taylor and participating artists include Zanny Begg, Megan Cope, Bill Buckley, Genevieve Murray (Future Method Studio), Josephine Starrs and Leon Cmielewski, Hayden Fowler, Grandeza and The Wired Lab.

The Long Paddock is the colloquial name given to Australia’s Travelling Stock Routes, a vast network of shared pathways that traverse regional Australia. Their status as public land is currently under negotiation, making this a timely and important project.

Over the last two years artists have conducted site-specific research in a series of “art/archlabs”, and workshops with Indigenous communities, Environmental groups and Cultural Institutions. This research has informed the creation of field recordings, ephemeral sculpture, temporary architecture, technologies, land art, film installations and participatory spatial practices documented through film and images on our website. The first public exhibition will take place at Wagga Wagga Art Gallery from May 6 - July 17, 2017. As well as the exhibition and public program, an ongoing audio archive of stories relating to the TSRs will be presented alongside the artworks.

The Long Paddock has been assisted by the Australia Council and Arts NSW. For more info see <http://newlandscapesinstitute.org/project/the-long-paddock/>

**N**  **W**  
**LANDSCAPES**  
**INSTITUTE** 



Roo track. Photo by Sean Crowley.

## EXPERIENCING NATIVE TITLE BY LYN SYME

Native Title has not been extinguished on crown land, including Travelling Stock Routes. Therefore TSRs should be claimable by the Traditional Owners of the area. However there is conflicting legislation by NSW and Commonwealth governments.

The New South Wales Land Rights Act (NSWLRA) allows for all crown land to be claimable by Local Aboriginal Land Councils (LALCs). However this doesn’t always apply. Because crown land comes under NSW Government, claims are automatically processed under the NSWLRA. However, if Native Title has not been extinguished it should be claimable by Traditional Owners in that particular country.

It is unfortunate that the NSWLRA and the Native Title Act have been conflicted in such a manner. When the first Native Title Rep Body was established in NSW it was established within the NSWALC. This caused conflict between LALCs and Traditional Owner organisations. Some LALCs supported the Traditional Owners in their area and there were some LALCs and Traditional Owners who could not agree.

Eventually the Native Title Rep body was established under Native Title Services Corp. (NTS Corp), later becoming NSW Native Title Services Corp (NSWNTS Corp).

Native Title Claims in NSW have been largely over “Future Act” claims, for example mining, quarrying, etc – something that disturbs the earth. There have been a very small number of Native Title Determinations in NSW.

Regardless of all of this, it will not resolve the conflict between LALCs and Traditional Owners.

Under the NSWALC, Land Councils were established with contemporary borders, not Traditional Country borders. These borders, or boundaries, were based on contemporary Aboriginal population areas. What should happen with TSR’s? They should be handed over to Traditional Owner organisations without any hesitation – no red tape, and cut the bullshit. We have experienced one Native Title Agreement where crown land was placed in Trust with the Mudgee LALC by the NSW Government and we have never seen it and it’s billy goat country anyway. We get given the scraps once again!!!



Stock grazing amongst turbines at Taralga Wind Farm. Photo by CWP Renewables.

# CRUDINE RIDGE WIND FARM

*Mark Branson*

The Australian Government has set the following targets for renewable energy generation through the Renewable Energy Target (RET):

- 33,000 GWh (Gigawatt hours) per annum of renewable energy by 2020 (in 2015 Australia generated 15,200 GWh of renewable energy).
- 23.5% of Australia's electricity to be generated from renewable sources by 2020.

To meet the RET there needs to be substantial investment in new wind and solar projects: \$40 Billion of private capital investment, and 15,200 new jobs over the next 5 years.

The Crudine Ridge Wind Farm, a project of CWP Renewables, was granted approval from the NSW Department of Planning and Environment on the 15th

May 2016. CWP Renewables has over two decades of experience in successful renewable energy projects, having been involved in the development, construction and operation of wind farms in Australia since 2007.

Wind farms provide an opportunity for farmers to diversify their land use and increase their income. They also provide regional investment in jobs and community funds. The Crudine Ridge Wind Farm project has established a database of local contractors and businesses which have expressed interest in construction contracts.

Construction of the Crudine Ridge Wind Farm is proposed to commence in late 2017. The approval permits up to 77 wind turbines with tip heights up to 160m. Land will be leased from 17 freehold landowners, with

the initial lease terms being 25 years. Farming activities continue during construction and operations. These leases allow for the construction, operation and decommissioning of:

- wind turbine generators
- access tracks
- power lines (over-head and underground)
- one substation location
- construction and operations compound

The Wind Farm is responsible for decommissioning all wind farm infrastructure at the end of the lease.

On the 15th July 2016, the Commonwealth Department of the Environment recommended several approval decisions and supporting conditions that the Crudine Ridge Wind Farm project will need to meet. Typical conditions of approval which

will be satisfied prior to the commencement of construction include:

- Environmental Management Strategy
- Bird and Bat Adaptive Management Plan
- Biodiversity Offset Plan
- Traffic Management Plan and Road Dilapidation Surveys
- Compliance Management Systems
- Heritage Management Plan

CWP has secured a 674 hectare property on Hill End Road as a Biodiversity offset. This is currently a low intensity pastoral holding, featuring Box Gum Woodlands and Stringybark Woodlands. The property has the potential to be foraging habitat for Swift Parrots, Regent Honeyeaters and other wildlife.

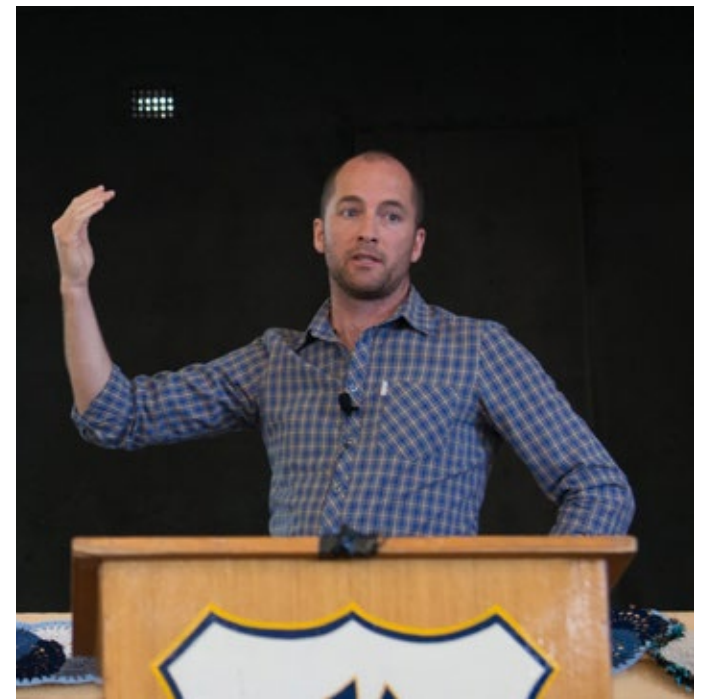


### WIND FARMS COMMISSIONED IN 2015

OWNER	LOCATION	STATE	CAPACITY (MW)
Banco Santander and BlueNRGY	Taralga	NSW	106.8
Pacific Hydro	Portland Stage 4 (Cape Nelson North and Cape Sir William Grant)	VIC	47.2
Mitsui & Co Ltd	Bald Hills	VIC	106.6
Electricity Generating Public Company (EGCO)	Boco Rock	NSW	113
Future Energy	Chepstowe	VIC	6

### WIND FARMS UNDER CONSTRUCTION AT END 2015

OWNER	LOCATION	STATE	EXPECTED COMMISSION YEAR	CAPACITY (MW)
RES Australia	Ararat	VIC	2017	240
Necen	Hornsedale Stage 1	SA	2017	105.6
Windlab	Coonoer Bridge	VIC	2016	19.8



### KEY STATISTICS:

- Up to 77 turbines
- Maximum tip height of 160m
- Capacity up to 135 MW
- Enough to power 57,500 homes p.a.
- Annual greenhouse gas savings of 357,954 tonnes of CO<sub>2</sub>e

### KEY ADVANTAGES FOR THE LOCAL COMMUNITY:

- Direct income for involved landowners
- Will generate up to 200 jobs
- \$168,000 per annum contributed to community funds across two LGAs
- Investment of \$300 M of funding in the Project
- Diversify the economy of Central West NSW



Turbine engineers commissioning a machine at Taralga Wind Farm. Photo by CWP Renewables.



Returning home from the tip with building materials. Photos by Artist as Family.

# WHAT THE HELL ARE YOU DOING?

*Artist as Family respond to questions that encircle their practice*

## **Academic:**

So, what exactly is a neo-peasant?

## **Artist as Family:**

A neo-peasant is someone who's involved in the household and community economies and has a close relationship to their local land, which is reached and understood primarily on foot. We incorporate small-scale agrarian, foraging, hunting, preserving and fermenting knowledges into our day-to-day processes. A neo-peasant requires little money and resists wage-slavery, debt, and the heavily militarised global economy. A neo-peasant most likely doesn't shop in supermarkets, own a car, a credit card or a television, meaning we do not have to go to work (or do much money work) to pay down debt, and therefore we have time to organise and be accountable for our food and energy resources. A neo-peasant will often come from the middle classes, but finds consumerism repulsive. Neo-peasants are pragmatic and are voluntarily reconnecting with their peasant

roots before they're forced to simplify under future global economic contraction. In this way neo-peasants are pioneers in moving backwards. Neo-peasants are economic conservatives who shun radicals like Adam Smith. We are cultural radicals who disregard conversion religion, Promethean anthropocentrism and patriarchal polemicists. Our gender compass finds true north in that branch of feminism known as radical homemakers.

## **Academic:**

Aren't you just middle-class people colonising the discourse by calling yourself neo-peasants?

## **Artist as Family:**

The violence of majorities and minorities is indistinguishable other than to identify that one is aggressive and one is retaliatory. We don't believe we're being violent by identifying with those in our cultural past who lived simply and in relationship. We're middle-class by a couple of generations and we're turning things around, incorporating permaculture principles to

transition from a dependency on industrialised economy and resources. We're facing our peasant and indigenous ancestors from Europe, calling out to them, singing the songs of our old people when the world was quiet enough to hear them. We understand we don't have to be Promethean monsters any more; we don't have to be hypertechnocivilians who have forgotten the faults of Epimetheus; we don't have to participate in permanent war, fighting under the banner of Christian-capitalism. We have ancestors who knew how to live well in the world and we're returning home to this wellness, on Dja Dja Wurrung country, in respect of our old people and in respect of the old-timer ancestors of the land we now live within, who share similar ethics and processes when it comes to making life and making more life possible, generation after generation.

## **Famous Kandos artist:**

Is permaculture just a fuckin' exit strategy for fuckin' artists

disillusioned by the fuckin' art world?

## **Artist as Family:**

Yes. By which we mean, Absolutely yes!

## **Famous Kandos artist:**

Is that why you created *Artist as Family*?

## **Artist as Family:**

Yes. Artist as Family is just one response to the predicament of industrialised arts practice framed by the growth imperatives of money. Money must grow, it must keep writing IOUs, which forms in the arts an innovation anxiety, to stand above, to be more extreme, to make more noise. Our name takes the solo-career sadism out of culture-making and gets back in touch with daily fermentation, brewing diverse communities involved in the performances of stalling death, momentarily, to make beautiful moments of inebriation and poem making. Galleries, markets, museums, curators and careers sterilise these magic fermented moments of home and community life that call on song

to be sung in the honouring of relationship.

**Murdoch journalist:**

Do you ever feel like running down to the supermarket and buying a hot chicken and a loaf of bread and taking the “easy” way out?

**Artist as Family:**

We wouldn't touch a chicken from a supermarket because that hen has more than likely come from a prison-like existence and been tortured in death. Running down to the supermarket is not an easy way out for us. After years of eating exceptional food for little money the thought of having to pay to eat crap from Coles, Aldi, IGA and Woolworths is entirely unappealing. The packaged food (90%) of supermarkets is mostly laced with refined sugars, harmful additives and carcinogens, and the so-called 'fresh food' (10%) is long-termed stored, sprayed with harmful methyl bromide, refrigerants or other nasties and, as a result of the storage, has little nutrition.

**Permaculture student:**

How do you deal with everyday waste, energy and water consumption in your household?

**Artist as Family:**

All waste becomes something useful. For example when the wood-fire, which heats our water and home and cooks our meals, is cleaned out we sift the potash over the garden and capture the coals to later pound into a form of bio-char. Bio-char is used in

our compost toilets to mitigate unpleasant smells, it feeds our soils indefinitely, adding minerals, creating habitat for beneficial soil microbes and sequestering carbon. Because we don't shop in supermarkets we have little unrecyclable packaging. Humanure is composted and recycled, wastewater is filtered and fed into garden swales, food scraps from our own kitchen and local cafés are fed to our worms, chickens and ducks. We salvage most of our building materials. We only wear op shop clothes, and so on and so forth.

**Frugalist:**

What do you do for toilet paper?

**Artist as Family:**

Instead of toilet paper we use family cloth: squares of cotton cloth cut from an old op-shopped flannel bed sheet and sewn around the edges. After use, they are put in a bucket then hot washed, in the same way as cloth nappies. They are hung out to dry and re-used. We do a hot wash once or twice a week with water we catch and heat ourselves. By not buying toilet paper we save over \$300 a year.

**Concerned citizen:**

If your kids don't attend a “regular” school how do you go about setting down the basics (reading, writing, math) and how much do your boys direct their own learning?

**Artist as Family:**

Children learn in environments that stimulate them. Woody is



Garlic harvest.

teaching himself to read because he sees reading as valuable and interesting. While we recognise writing and reading are technics that aid in the creation of anti-ecological cultures (just as abstracted thought constructs barriers to relationships) we also see a momentary value (political and otherwise) in these activities as we (generationally) transition back to oral-ecological culture making. Every week Woody's letter and numeral recognition grows, slowly building an understanding of these symbolic systems. We aid that learning by playing word and number games, by reading to him and

by having books around the house. Hypertechnocivility (the digi-industrial culture of cities) is obsessed with symbols. A foregrounding of symbolism (logos, brands, alphabets, emblems, numerals, etc.) seems to construct cultures who lose track of their waste, making pollution increasingly normalised. Perhaps this is because symbols replace relationships, as is the case with teenagers, where Adidas, Coke and Nike logos are often more important than relationships with people and environments. The worlds within the bio-physical world are where our boys' learning mostly takes



Left: Making kefir cheese (Photo by James Krummy-Quinn). Centre: Building from scrap and salvaged materials. Right: Making biochar.

place. Zephyr loves building, creating and communicating. He has a strong desire to learn how things operate, from mechanical systems to more philosophical ones. He is attracted to the opposites of neo-peasantry, as is his learning at present. We can't force our children to learn, we can only provide the space for them to want to discover, engage and create in their own way.

**Concerned citizen:**

But how do your kids "socialise"? Aren't you scared they're going to miss out?

**Artist as Family:**

Well Zeph, who is 15, has taken himself off to the local high school to do just that - socialise. But mostly the boys get their communicative and social skills by living in a house with people staying from all over the world, being community gardeners, and being involved in the lives of many friends, neighbours and community-engaged people. If we lived the nuclear family paradigm, then yes industrialised schooling might make more sense. FOMO is an anxiety particular to the hypertechnocivilian.

**Blog reader:**

I noticed recently on your blog that your son Woody made it to the age of four without eating processed sugar. Is this something you hope to keep up with? How do you "police" what he eats/is given by other people?

**Artist as Family:**

Yes, we will keep processed sugar out of our diets. We do eat honey and keep honey bees who, though very short-lived and don't hold

university degrees, are among our finest teachers. Processed or refined sugar is akin to alcohol in the way it affects people's hedonic pathway and metabolism. As we don't have refined sugar or sugar products in the house, sugar doesn't register on Woody's radar so no policing is necessary. We don't shop at supermarkets so there are no shiny packets or chocolate bars to entice him and we don't own a television so there are no ads to seduce him. When we go to parties where there are sugary foods he asks us what he can eat. We lead by example, so it feels fair to him. A treat for Woody is a mandarin picked off the tree, a handful of ripe berries or a sweet red capsicum. With Zephyr, a teenager in utter rebellion of Artist as Family and a staunch protector of the status quo, he eats all kinds of junk food when he goes up the street with his friends.

**Casual question maker:**

What does your average day look like?

**Artist as Family:**

At this time of year (autumn harvest) we are fishing, swimming, preserving fruit to store for the winter, fermenting fruit and vegetables, brewing fruit wine, beers, jun (a honey and green tea fermented beverage) and other pro-biotic rich beverages, teaching other people about our form of neo-peasant economics, and working with them to fill our cellar while preparing meals together. We are busy all the time. Before we started to live this way we were riddled with



Bringing in the wood.

anxiety and helplessness about the state of the world. Now we feel strengthened by our choices and actions to create the world we want to live in and leave for future generations at a very local and relational emplace. By not shopping at the supermarket we are not supporting multinationals that put profit before people, climate and environments. By not relying on cars we are fit and healthy, don't have to find thousands of dollars annually to keep them, we're not polluting rivers, oceans and skies, and we're not contributing to oil wars. We buy some of our food directly from local farms, from our two local food co-ops, we garden at home and with others at our town's five community gardens,

we barter with friends (eggs for milk, honey for wine etc) and we buy any extra things we need from a family-run grocery store.

**Pet fanatic:**

I notice Zero, your Jack Russell, is so fine his ribs show. What do you feed him?

**Artist as Family:**

We consider Zero kin, not a pet. He's one of the family and just like us has very specific tasks to play. He catches rats and mice, empties the cellar, compost bays and under the house of their presence. He scares away the Sulphur crested cockatoos and Rosellas who come to raid the fruit trees. He hunts rabbits and occasionally brings one home for the family's pot. For this non-monetised work he is given kitchen scraps, bones, bedding and a loving family life. He supplements his income by his own tenacity. He is not a pet, not given processed food, not indulged or spoiled. We love him too much for that. His diet is akin to a camp dog and he is fit and keen and alive as a result. He has never had a medical issue that has required a vet. In dog years he turns 49 years old this winter.

**Concerned structuralist:**

But is what you do art?

**Artist as Family:**

This question no longer has any logic. It belongs to institutional life. What we do is make culture - fermenting ecologies in many places. In our bodies, on our bodies, within the soil, inside pots, in marginal forests, on public plots of land occupied specifically for fermenting community and growing resilience to the predicament of our times.




Shelling broad beans on the tip-claimed sofa.



Storing the fruits of summer for the cold months.

# BLACKBERRIES

*Kirsten Bradley - Milkwood Permaculture*



Blackberries spread across southern Australia firstly as a result of white explorers and surveyors being given pouches of blackberry seeds by the authorities, with directions to sprinkle them in the cold ashes of their campfires before moving on. The idea was that the blackberries would grow and provide familiar food for the settlers coming after. The blackberries have thrived and been with us in these parts ever since. Much maligned and poisoned by the later editions of those same authorities, as wild food became undesirable and the blackberries proved a little too effective at growing on cleared and denuded land. They are a scar-tissue species - holding together damaged and eroded land until a taller, shadier succession ecotone or species shades them out, signifying a stabilising ecosystem. Providing valuable habitat for small birds, marsupials and some monotremes in compromised ecosystems, blackberries hold space. Space to hide, to grow, to eat. Used as a tool for ecosystem management,

blackberries can be compacted to create a fire retardant understorey in fireprone gullies. They can also be used as valuable late summer fodder for milking goats - grazing the blackberries down nearby gullies can increase milk supply, add fertility to the eroded gully soil and help the ecosystem move slowly forwards. Both berries and leaves are edible and useful. Fruit: blackberry fruit is a favourite for smoothies, cakes, jams, juice or home-made country wine, or straight off the vine and into mouths. Very high in vitamin C and antioxidants. Leaf: blackberry leaves are very high in vitamin C and useful tannins - they can be chewed to soothe inflamed gums. A tea made from the leaves is used to treat diarrhoea, menstrual pain, and gastro-intestinal issues. Fermenting the leaves for a flavour boost: bruise fresh leaves, then wrap in damp cloth and leave in a warm place for 2-3 days. The leaves will begin to smell pungently like roses. Dry leaves and then use as a flavourful and medicinal tea. Drink as much as you like.

# WHAT ABOUT WILLOWS?

*Jill Moore-Kashima, Paul Newell, Haydn Washington, David Standfield, with Laura Fisher and Lucas Ihlein*

## LAURA FISHER AND LUCAS IHLEIN

During *Futurelands2* a discussion took place about the use of Willow trees in Natural Sequence Farming. Willows (an introduced species) have proven to be very effective in restoring eroded creek banks, because they are resilient and fast growing. But they are designated an invasive weed across Australia. If you do a Google search for “Willows in Australia” you will encounter a range of perspectives. You might even come across the “Willow Warriors”: adventurous conservationists who remove willows and other exotic plants from waterways across NSW.

We thought we’d try to get a better understanding of the issue. We invited Paul Newell (farmer and Natural Sequence Farming expert), Haydn Washington (environmental scientist), as well as Dave Standfield and Jill Moore-Kashima (both highly experienced in land restoration) to share their thoughts.

Many of us who are concerned about the health of Australian environments are neither scientists nor farmers, and can find such discussions a little mystifying. Most of us would hope that regenerative agriculture practices like Natural Sequence Farming and environmental conservation practices could be compatible. Of course, it turns out to be more complicated than that.

Perhaps Tim Low’s book *The New Nature* offers a useful angle here. Low points out that there is now a multitude of weird and wonderful ecological interdependencies in Australia. He suggests that rather than speaking of “nature” as if it is something coherent that is under threat, we should speak of many “natures”. These “natures” are constantly evolving in response to our human-centred food systems, our land management practices, our industries, our cities, suburbs and farms, our waste, our rail-lines and highways, and

the various non-native species that accompany human settlements. While some indigenous plants and animals have an increasingly precarious existence, others are thriving in new and seemingly unlikely habitats. Low writes that ‘nature is an opportunist’. He makes an observation that might be surprising to many of us: there is ‘no law of nature that forces native animals to prefer their natural foods, or even to recognise them’.

Willows are plants that – unlike many others – can thrive in land that has been denuded of vegetation. And that’s the critical issue here: how can we rehabilitate landscapes and waterways that have been compacted and eroded after many decades of human habitat destruction (including tree-felling and scrub-clearing)? From one point of view, willows are extremely troublesome because their dominance and their capacity to rapidly colonise waterways prevents native ecologies from being revived. From another, they are a starting point for the repair of degraded land, re-establishing fertility cycles in which water, soil, vegetation and animal life interact productively – processes essential for land rehabilitation. While the former point of view emphasises the need to conserve the continent’s native biodiversity (especially important since Australia supports a significant proportion of the globe’s biological diversity), the latter argues that we should employ whichever species most effectively and efficiently rejuvenate these fertility cycles.

So where does that leave us? Perhaps a little more aware of the complex challenge of preserving biodiversity while also restoring degraded land to a functional state for plants, animals, and humans. This returns us to one of the major themes of *Futurelands2*: that our conversations about land-use, food production, native species, weeds, conservation, and cultural traditions, need to become multi-dimensional.



## JILL MOORE-KASHIMA

In land stewardship as in other areas of life, humans generally manage according to both their desired outcomes and values. This can lead to exciting and productive changes in the landscape but also to unforeseen and unintended consequences. At first these may be dismissed as unimportant – a mere “cost of doing business” – but over time, they may have far-reaching implications.

One example of this has been the employment of various cultivars of European willow (*Salix*) into Australian waterways to slow water flow and stabilise creek and river banks made

vulnerable to erosion by removal of native species by clearing and overgrazing. Natives such as Red Gum, Casurina, Bottle Brush and varieties of reeds originally performed this function, but are slow growing and more difficult to establish than willows, which root quickly and easily from branch material. However, willows themselves consume substantially more water than these natives. Their root systems form an impenetrable mass – this is what farmers trying to slow down water movement want, a living “wall” – but they provide far less habitat for native fish and frogs. Rock crevices used for breeding by frogs such as the

endangered Booralong become filled by roots. Research shows that willow-lined reaches of rivers support significantly fewer, and less diverse, species of insects, fish and birds compared to those lined with native trees and shrubs.

Part of this loss of diversity is a result of the deciduous nature of willows, in an Australian landscape in which most plants retain leaves year-round. So in Summer, they provide shade more dense than natives – inhibiting many understorey plants which have evolved to need intermittent light – then suddenly drop their leaves all at once in Autumn. This “leaf shock” and the very fast breakdown of willow leaves briefly alters pH, temperature and oxygen content in the water. This is detrimental to all our native fish and other aquatic life, putting general stress on the ecosystem.

Two questions now dominate Australian thoughts about willows. First: is the short term gain of stabilising stream-eroding land and slowing water to allow soil re-hydration (as in Natural Sequence Farming) worth the downsides of planting quick-fix non-natives? Second: what, if anything, should be done in areas where established willows exist?

There have been numerous disasters where Councils and others have removed trees using heavy equipment, without thinking through what will happen when the next flood comes. The most effective approach seems to be chainsawing off all branches leaving a short trunk (with roots still in place to hold the soil) then injecting poison. The NSF situation is more difficult – it must be a decision of the farmer, taking account of terrain and what other, more benign native species may do the job, along with structures such as leaky weirs. But in this case the use of willows as an interim plant may be necessary in overall repair of country.

## PAUL NEWELL

Willow is an important functional plant species within the Australian continental ecosystem. While many species of both plants and animals that are well understood as to their use and benefit to people and to nature as

a whole are looked upon favourably by people, some are not.

As stewards of land and water, people cannot improve the natural environment by taking a species out. But we can improve the function of an ecosystem by bringing a different species in: the more species types there are, the more functional the ecosystem becomes. Living species, soil and water co-evolve. Desert is the result, over time, of single species dominance as monocultures.

Willows annually provide a lot of beneficial biomass and fodder and so animal manure is also added to the environment each year along with ‘leaf fall’. This allows other species that need a greater annual supply of organic matter as plant food to also grow there. Without the willow species growing in place, species number over time would be reduced and succession to a more productive community of species would not occur. Increasing species number and diversity ‘shrink the desert’ over time. The spreading green leaves provide shade from the hot sun to cool the land and surface water. Also, the transpiration of water vapour cools the passing air. The root system, growing as a mat over the stream bed soil, is not only able to slow stream water but is also able to collect and increase the accumulation of sediment as vegetated alluvium (deep soil deposited by water) and hold the earth of stream banks and beds that then refuse to be eroded by even the deepest currents of flood water.

One section, at Mypolonga, of the lower Murray River alluvial plain in the present day is more functional (productive) than the whole riverine environment from Albury to Goolwa. Ecologically that can be attributed to densely growing willows where water streams flow periodically. These were initially planted and then in turn regenerated with many other species also present, over the last hundred and fifty years. All deciduous tree species are particularly important to Australia as this whole continent has lost so many of its original deciduous plant species.

Willow, along with all other species of microbes, plants and animals (the whole biological community), form part of the “self-repair” system that nature



Photos by Diego Bonetto.

provides free to all landscapes. Species gain (increasing numbers of species) increases “self-repair” of any landscape by all microbes, plants and animals living together as a functional ecosystem. Species loss decreases “self-repair” of any ecosystem, so that it becomes less functional over time. This lack of natural “self-repair” at scale is warming much of Australia today wherever vegetation is being reduced, rather than being increased in height and density.

For people to ‘Shrink the Desert’ of Australia the free growing of multiples of species of plants, animals, birds and bees (all species together), to live where they wish and to forage where they wish, is of greatest importance, just as they originally naturally evolved before people evolved, to enrich “Habitat in Common”.

The living world is not governed by people alone. Rather, it is shaped by the natural manufacture, local retention and cycling of food minerals, nutrients and water. These processes are induced by the natural regeneration of multiples of species that in turn continue naturally living, dying, decaying and growing once again as nutrient dense food

for further multiples of species of plants and animals.

Nature is our only true reference, teacher, servant and eventual judge.

## HAYDN WASHINGTON

Recently I attended a meeting where it was stated that a ‘weed comes in, does its job, then disappears’. This takes a very benign view of a problem that is causing species extinction worldwide. It is *not* one supported by the evidence gathered by plant ecologists over the last 200 years. It was also suggested that such concern was ‘plantism’, implying it is racism against certain plants. This of course makes as much sense as arguing that concern about toxic chemicals is ‘chemicalism’ or concern about soil erosion is ‘soilism’. For an ecologist, a weed is an *exotic species invading native ecosystems*. Such introduced species don’t have the co-evolved predators and pathogens to control them that they had where they evolved, hence they can spread unchecked and take over ecosystems, causing major native species extinction.



Willows on the Murray. Photo by Jen Downs.

Exotic species are generally considered either the second or third major cause of extinction.<sup>i</sup> There is a term for the causes of extinction – ‘HIPPO’ which stands for Habitat destruction, *Invasive species*, Pollution, Population and Overhunting.<sup>ii</sup> We are in the midst of the sixth great extinction in the fossil record (Kolbert 2014), with extinction rates at least 1000 times more than normal (MEA 2005), and recent estimates by biodiversity experts (Raven et al 2011) indicate that if we don’t reduce stresses causing extinction – two thirds of life may be extinct by 2100.<sup>iii</sup> Australia also has one of the worst records of species extinction in the world and this has not stopped.

The Invasive Species Council shows that in Australia there are:

- 26,242 exotic plant species
- 1765 affecting the natural environment
- 606 are invasive
- 127 weed species are impacting threatened native species and ecological communities in NSW.<sup>iv</sup>

#### Willows vs native species

Willows are advocated by sequential farming to slow river flow, and it has been stated that willows survive floods better than native species. There are many Melaleuca communities nearby and river oak communities that are subject to flooding. On the Colo there are 20-30 metre floods and river oak survives happily. An even harder native is the water gum (*Tristanopsis laurina* and *T. neriifolia*) that lives on the rock piles on the Colo gorge, taking the full force of major floods with little damage. If practitioners of sequential farming are concerned about flood-adapted species,

then perhaps they should try some water gum mixed in with melaleuca and river oak? These species evolved in this environment to be adapted to this niche over millions of years. They however provide food for native species, while the willow is not evolved to be part of local plant communities.

#### But won’t exotic species become part of native ecosystems anyway?

Eventually all invasive weeds will be naturalized in Australia. Eventually – but this may be thousands of years for some. Local species will evolve to become their predators and pathogens and they will be regulated as part of a native ecosystem. Some already have, others however are the invasive species that concern plant ecologists. At a time when native species are under major stress from fragmentation of habitat and climate change, weed invasion is another major stress. They have the potential to send native plant species extinct, but also the native animals that feed on them. Such species need to be controlled to protect native biodiversity. Willows have not disappeared where they invade wild rivers. The group ‘Willow Warriors’ has spent over a decade removing the willow invasion on the Colo river inside Wollemi National Park.

#### Conclusion

Everyone is entitled to their own opinions but not their own facts. Exotic weeds (especially invasive species) really *are* factually a serious problem. I support the ‘sequential’ approach of re-introducing landscape ‘steps’ and ‘chain of ponds’ topography by making barriers to slow water flow. It makes sense to use plants

to hold such barriers together, as native plants did before, still do in many places – and can again in degraded areas. Such native species as Melaleuca, river oak and water gum evolved here and are food and habitat for native species. Their use does not put greater pressure on our already stressed native ecosystems. We should not solve one problem by creating another. Native plants should be used in sequential farming, not weeds such as willows.

#### Notes:

- i) <http://www.oum.ox.ac.uk/thezone/animals/extinct/hippo.htm>; <http://arkoflife.net/why-species-go-extinct.html>
- ii) <https://www.e-education.psu.edu/geog030/node/394>
- iii) Kolbert, E. (2014) *The Sixth Extinction: An Unnatural History*, New York: Holt and Company. MEA (2005) *Living Beyond Our Means: Natural Assets and Human Wellbeing, Statement from the Board, Millennium Ecosystem Assessment*, United Nations Environment Programme (UNE), see: [www.millenniumassessment.org](http://www.millenniumassessment.org).
- Raven, P., Chase, J. and Pires, J. (2011) ‘Introduction to special issue on biodiversity’, *American Journal of Botany*, vol. 98, pp.333-335.
- iv) [https://invasives.org.au/wp-content/uploads/2014/02/fs\\_weedwhitelist.pdf](https://invasives.org.au/wp-content/uploads/2014/02/fs_weedwhitelist.pdf)

#### DAVE STANDFIELD

I worked on the Upper Cudgegong Willows Project. The Cudgegong Catchment Committee and the Mid-Western Council had a whole lot of funding around ten years ago, and I was part of the team on the ground to do the primary poisoning and the mid-stream removal. The majority of my work on properties in the Central West, the big restoration jobs, has been about dealing with huge infestations of non-natives.

*Salix Fragilis* is the really

invasive one, the Crack Willow – which describes its habit of coming to bits, and colonising further down. If you break off a branch or even a small amount and send it down the river, it will eventually end up sitting on a bank and grow roots and form a new tree. That’s why they really propagate downstream. There are areas of the Cudgegong River where there is nothing but willows on either side, and they’ve really diverted the flow.

Willows do provide habitat for Longicorn beetle larvae, and Yabbies love the big root masses they have, that hang in the water. They are good at creating mud, anaerobic mud. In a really heavy infestation it lowers the dissolved oxygen content in the water. For most animals in the river, the less oxygen there is the less happy and reproductive they can be.

Willows don’t do any harm when they’re up in the paddock. If a willow is up off the river in a paddock, it’s fine – it’s good stock feed – it’s not an issue. It’s just when you get a really heavy infestation in a river that it causes problems. The key issue is they’re self-rooting plants and extremely resilient.

I can see the point of succession (in Natural Sequence Farming). I’d let the casuarinas and the eucalypts establish, and then I’d knock the willows off – just because I’ve seen what they can do downstream. I think it’s responsible to remove them from a waterway. Obviously you wouldn’t remove a whole lot in one area that are stabilising a bank. You’d do it in part – you’d plant out your casuarinas or your river red gums or something like that in a sequence among them, and wait for them to establish until you remove more – you do it sensibly. You’ve got to think in the long term about anything like this.



---

# CONTRIBUTORS

---

**Stuart Andrews** is the director of *Tarwyn Park Training*, the principle education wing for the Natural Sequence Farming (NSF) method, which is now internationally recognised for its innovative approach to farming landscape restoration. Andrews has four decades of experience as a farmer, and has been involved in public education for most of his adult life. As director of TPT, Andrews has conducted multiple workshops on NSF with land owners in Queensland, New South Wales, Victoria and the ACT.

**Artist As Family** is a performance collective that lives in Dja Dja Wurrung country. Their practice has been widely documented and surveyed in art anthologies, journals, videos, exhibitions and online media. In 2010 they produced *Food Forest*, which was commissioned by the MCA in Sydney, and in 2014 *Food Forest* featured in *Art & Ecology Now* (Thames & Hudson). In 2015 Patrick Jones and Meg Ulman from the collective published *The Art of Free Travel* (NewSouth), an ecological memoir of their 400 day cycle trip from their home to Cape York. The book was shortlisted for an ABIA award in 2016.

**Adam Blakester's** passion and work is focused on rural and regional sustainability: improving community wellbeing in ways that are environmentally sustainable and economically equitable. Adam is Executive Director of Starfish Initiatives; Director of Minerals Policy Institute, Lock the Gate Alliance, and Friends of Myall Creek; Chair of The Armidale Waldorf School Governance & Leadership Committee, Social Leadership Australia alumnus and active member of the Great Transition Initiative.

**Diego Bonetto** is a multimedia practitioner dedicated to enabling convivial conversations around belonging, sustainability and agency. Bonetto regularly conducts workshops, foraging tours and performances and his exhibitions and commissions have included *FoodFight* (a C3West commission in partnership with the MCA and Liverpool Council, Sydney, 2016), *Wild Stories* (solo show, Casula Powerhouse Art Centre, 2012) and *State of the Arts* (group exhibition, Italian Pavilion, Venice Biennale 2011).

**Kirsten Bradley** is a grower, educator and storyteller whose work focuses on permaculture. Following an early career as a musician and visual artist, Kirsten established Milkwood in 2007 with her husband Nick Ritar. Milkwood's focus since that time has been on regenerative agriculture and permaculture design education, to enable communities to design resilient futures and local food systems, from the home scale upwards.

**Mark Branson** is an ecologist, land manager and environmental planner who is passionate about Australia's transition to a low carbon economy. Mark has worked on energy and infrastructure projects in Australia, Asia and North America and is now working with landowners to diversify regional land use and harness the power of wind and solar technology. Mark is currently a Development Manager with CWP Renewables, an Australian renewable energy company with expertise in wind and solar development, and is focussed on delivery of the Crudine Ridge Wind Farm as well as other renewable assets across NSW.

**Ann Finegan** is an arts writer and educator who has taught in Australia and France. Originally a lecturer in literature and philosophy, she has been teaching contemporary art theory for the past twenty years. In 2010 she founded Kandos Projects as an artist residency, and she co-founded the *Cementa* Contemporary Arts Festival in 2012. *Futurelands* is one of her festival initiatives. *Futurelands1* evolved out of the

Williams River Valley Artists Projects residency in 2011, which included a field trip to Tarwyn Park, home of Natural Sequence Farming.

**Laura Fisher** is an arts researcher and sociologist. She is currently a post-doctoral research fellow at Sydney College of the Arts, University of Sydney. Her writings have explored environmentalism in socially engaged art, urban cycling and land use cultures, Australian Indigenous art and cross-cultural encounters. Laura's current work marries social research and collaborative creative practice, and concerns the role artists are playing in bridging the rural/urban divide globally. She is investigating several artistic projects that are responding to rural depopulation, environmental degradation and changing food economies.

**Gilbert Grace** is a multi-disciplinary artist, curator and researcher. His current practice traverses urban ecology and mobility, models of self-sufficiency and retro-innovation, the science of clean energy and plant systems, and his family's farming heritage in NSW. Gilbert co-founded ARTcycle in 2010 and has led hundreds of group rides that introduce the public to features of Sydney's Indigenous, colonial and industrial history and bring riders to artists' talks, festivals and other arts events. Recent exhibitions include *Documenting the Sydney Green Ring*, *Cementa13* and 'Site Lines', *Hazelhurst Art Centre* (2015).

**Lucas Ihlein** uses socially engaged art to investigate agricultural and ecological systems. He is a founding member of artists' collectives SquatSpace, Big Fag Press, and Teaching and Learning Cinema. From 2011-14 he collaborated with Ian Milliss on *The Yeomans Project*, and is currently working on *Sugar vs the Reef?* with artists and farmers in Mackay, Queensland. In 2015 Ihlein was awarded an Australia Council for the Arts Fellowship for Emerging and Experimental Arts. He is an ARC DECRA Research Fellow at University of Wollongong, Australia.

**Klara Marosszeky** has been involved in the Australian Hemp industry for 17 years in both the farming and construction sectors. She is President of the Australian Industrial Hemp Alliance, Secretary of Northern Rivers Hemp and Director of the Australian Hemp Masonry Company (AHMC). Klara is a qualified workplace trainer and assessor, with a background in sustainability education as well as in hemp construction and delivers workshops and training for Owner builders, Builders, Building designers and Architects.

**Simon Mattsson** is based in Mackay, Queensland on the banks of the Pioneer River. He has been farming all his life, and has spent the last 30 years as a sugar cane grower. He was awarded a prestigious Nuffield Scholarship to study soil health in 2014, which has enabled him to visit farms in South Africa, Kenya, Russia, Czech Republic, Poland, Germany, the USA, New Zealand, Chile, Peru and Brazil. As chair of Central Queensland Soil Health Systems he actively promotes soil health on a local level, and is conducting multi-species cropping trials with the intention of making the sugar cane industry more environmentally and economically viable.

**Ian Milliss** began exhibiting in 1967 as the youngest member of the Central Street Gallery group and one of Australia's first conceptual artists. From 1971 he developed a practice based on cultural activism working with community and political groups, arguing that the artist's role is the adaptation and innovation of cultural memes rather than content production for the art market. He has worked in the Green Bans, prison reform and trade union movements and has dealt with a wide range of cultural issues including workers and artists' rights, sustainable farming, heritage and conservation, and climate change.

**Jill Moore-Kashima** was born in England and educated in Canberra and at the University of NSW. She has had a long and varied interest in both productive and restorative land practices, centred around the Northern Tablelands. From her base on the family property “Bai-Yai” – which is largely under Permanent Covenant to protect its Box Gum Grassy Woodland endangered community – she organises field days on soil health issues through Southern New England Landcare.

**Genevieve Murray** is the founder of Future Method, a research and design studio that actively questions and pushes the line between the practical and the abstract. Established in 2013, Future Method works collaboratively with creatives and academics who form their praxis in between established notions of contemporary architecture & art — seeking to extend and enrich the field of interdisciplinarity and collective culture and push them into the public domain.

**Paul Newell’s** working lifetime of experimenting on the land includes research with the NSW Department of Agriculture into multi-species crop and pasture practices in farming. For the past twenty years Paul has carried out research privately on various regional and family farming properties into natural farming methodologies, practical farm management, natural soil formation, and “increasing” agri-ecosystem function and processes. He has also been developing programs around “Landsmanship” principles as a teacher, trainer and consultant. Newell currently lives in Canowindra.

**Tracy Norman** is a small business owner and Managing Director of the Dungog Festival. With an interest in tourism, a degree in Ecological Agriculture, a strong will and a desire to see local sustainable agricultural enterprises thrive, Tracy has ambitious plans for her recent property purchase, with mixed enterprise farming, a cheese factory, eco-tourism resort and an education centre for ecological agriculture agroforestry pursuits. As MD of the Dungog Festival, Tracy oversees the eclectic mix of film, food events, artisan markets and music events that make up the Festival, which aims to showcase the beautiful Shire of Dungog.

**Bruce Pascoe** is an award-winning author, playwright, farmer and school teacher (among many other things). He is a Bunurong, Tasmanian and Yuin man based in Far East Gippsland, Victoria. Pascoe has written a number of celebrated works of fiction for children, young people and adults, as well as resource books to support the retrieval of the Wathaurong language of south western Victoria. His historical works include the acclaimed *Dark Emu*, *Black Seeds: Agriculture or Accident?* which was recently awarded the NSW Premier’s Literary Awards Book of the Year.

**Gerda Roelvink** is a senior lecturer in Geography and Urban Studies in the School of Social Sciences and Psychology at Western Sydney University. Her research expertise is in the field of diverse economies, focusing in particular on collective action and economic transformation. Gerda’s work on diverse economies includes the book *Building Dignified Worlds: Geographies of Collective Action* (2016) and the co-edited volume *Making Other Worlds Possible: Performing Diverse Economies* (2015), both published by University of Minnesota Press.

**Dave Standfield** has lived in Kandos for 17 years. When he’s not carving up the state forests on his mountain bike he works locally as a chef, baker and bush regenerator.

**Lyn Syme** is a Wiradjuri elder based in Kandos. She’s played a leading role in a number of Aboriginal cultural heritage projects in the NSW Central West, including the Dabee-Mudgee Travelling Stories Exhibition.

**Ceane Towers** is an Aboriginal women from the Wiradjuri (Lithgow/Bathurst), Gamilaraay (Gunnedah), and Darug (Warmuli Prospect) Region from her mother’s tongue. Her father is of European heritage.

She is a mother (Ghuni) of 5 and a Grandmother (Ghuni Nurang) of 2. Ceane has studied, performed and taught Aboriginal dance for over 25 years, and is also an artist and a practicing ATSI Medicine women (Spiritually, Ceremonially). Ceane has a Bachelor of Education and Masters Degree in Social Policy and works professionally in her ATSI communities focusing on social welfare for communities, mental health, education, culture, creative arts and history.

**Larry Towney** is a Wiradjuri man based in Orange, NSW. Larry has just retired from his role as Senior Land Services Officer (Aboriginal) at the Central Tablelands Local Land Services. In recent years he has played a leading role in a variety of community health and wellbeing initiatives and projects dedicated to managing Aboriginal cultural landscapes. In April 2016 he contributed to housing construction in Nepal as a member of the Nepal Friendship Community Development and Training project, organised by Rotary, Orange. Towney is currently working on traditional fire management methodologies and a Wiradjuri seasonal calendar mobile app.

**Jason Tuckwell** is a theorist who researches creative practice in arts and technology. His recent work examines Aristotle, Descartes, Heidegger, Simondon and Deleuze. This work will appear in a forthcoming monograph *Deviant Techné: Creation and the Function of Art* published by Bloomsbury in 2017.

**Haydn Washington** is an environmental scientist, writer and activist with a 40 year history in environmental science. He is an Adjunct Lecturer at the PANGEA Research Centre at UNSW, and has worked in CSIRO, environmental NGOs and as Director of Sustainability Projects in Local Council. His interests are sustainability (in all its forms), solving the environmental crisis and a sense of wonder at nature. His books include *A Sense of Wonder* (2002) and *Demystifying Sustainability* (2015). In the 1970s Haydn was Hon. Secretary of the Colo Committee, which campaigned successfully for the formation of what is now the Wollemi National Park.

**Kevin Williams**, Wiradjuri man, was born in Griffith in 1950. He has resided in various locations in the Central Tablelands for the past 15 years, most recently in Kandos for 6 years. His professional background is across a number of disciplines, but his present focus is community based projects, often involving the cultural aspects of his Aboriginality.

**Alex Wisser** is an artist and creative producer. He is co-founder and co-director of the Cementa Contemporary Arts Festival in Kandos, NSW, having formerly co-founded the ARI space INDEX. in St. Peters, Sydney. He recently curated *Future/Public* for Artlands Dubbo and the *Homeground* series of solo exhibitions for regional emerging artists at The Western Plains Cultural Centre. His individual arts practice is based in photomedia but he also works in installation and performance. He has exhibited widely across Sydney and has been selected for numerous prizes including Redlands Konica Minolta Emerging Artist Prize, Fisher’s Ghost and The Bowness Photographic Prize.





# FUTURELANDS 2

**The Futurelands2 Newspaper**  
Published by Kandos School of Cultural Adaptation (KSCA)  
April 2017

ISBN: 978-0-6480276-0-7  
Printed by Spotpress

**Editors:**  
Laura Fisher and Lucas Ihlein  
**Graphic Design:** Fiona Hudson  
**Layout and Typesetting:**  
Eloise Lindeback

**Digital Layout Assistant:**  
Kristian Bonitz

**Copy editing:** Ian Milliss

**All photos by Alex Wisser unless otherwise attributed.**

The organisers and editors would like to thank:

Bernadette Hundy, Janice Sack, Tony Banks and Meg Wales of Kids & Carers, Paul Blackwell and Kay Crean of Mid-Western Regional Council, Adam Bryce of National Parks & Wildlife Services (Mudgee area), Leanne Thompson, Damian Castaldi, Bianca Hester, Keeli Maddick, Justin Hewitson, Eloise Lindeback, Georgie Pollard, Christine McMillan, Belinda Innes, Alice Wood, Leo Boersma, Kylee Robinson at Honey Tree Café, Joey Astorga, Hellene Algie and Jake Beard of Alfie's Kitchen, Fiona Hudson, Naked Lady Wines, Dave Standfield at Rylstone Woodfired Bakery, Terry Burrows, Ray and Julie Odgers of Kandos Motel, Mohammad Nawab at Kandos Fairways Motel, Brent Barlow and Agness Knapik.

Funding for the production of *The Futurelands2 Newspaper* was provided by the University of Wollongong's Global Challenges Program, via Lucas Ihlein's ARC DECRA Research Fellowship.

The *Futurelands2* Public Forum was staged by the Kandos School of Cultural Adaptation (KSCA) and presented within the annual public program of Cementa Contemporary Arts Festival. It was convened by Laura Fisher, and co-organised by the members of KSCA, including Diego Bonetto, Ann Finegan, Gilbert Grace, Alex Wisser, Lucas Ihlein, Christine McMillan, Georgie Pollard and Ian Milliss.

The Public Forum was co-presented by Cementa Inc; Material Ecologies Research Network (MECO) at University of Wollongong; and the Space, Place and Country research cluster at Sydney College of the Arts, University of Sydney.

*Futurelands2* was made possible by funding from the Australian Government through the Australia Council, its arts funding and advisory body. The Public Forum was also generously supported by CWP Renewables.

Thanks to all the authors for their commitment to the project.



UNIVERSITY OF WOLLONGONG AUSTRALIA

