A PERMACULTURE PAPER

In the Anthropocene…
WHAT ROLE FOR PERMACULTURE?

THIS SMALL PUBLICATION asks what role the permaculture design system will play in the changing world of the near future. It was originally intended to accompany a group future directions process at APC12 (Australasian Permaculture Convergence 12 in 2015), however that did not happen.

Permaculture, now with a history spanning almost 40 years, has been adopted mainly by voluntary organisations as well as individuals in civil society. A small number of businesses and rural producers have adopted elements of the design system and the appearance of Accredited Permaculture Training (APT) post-2000 provided a pathway to the use of permaculture design as a workplace technology, a pathway that went beyond the Permaculture Design Course (PDC). The PDC was targeted at those seeking a deeper understanding of the design system than books, online sources and introductory courses could provide.

The arrival of APT and the numbers enrolling in the PDC signifies how permaculture has undergone its own acceleration, paralleling at the micro level a much larger, more enveloping acceleration we will discuss in this paper.

So far, some success

Permaculture is a technics adopted mainly by civil society. A technics consists of the tools, technologies, body of knowledge, study, methods, practices and culture around a process or technology.

One of permaculture's greatest effects has been in motivating people to take action, either individually or collectively, to improve the resiliency of their lives and their neighbourhoods. Resilience can be thought of as a capacity to resist, adapt to and recover from influences and pressures coming into a system from outside. It is about adaptability and retaining cohesion under pressure. It is a property that is being put forward as being more timely and achievable than 'sustainability'. More on that later.

If we think of how permaculture has moved from its inventors to its early adopters and into early mass adoption we see that it has been successful even if it hasn't been taken on by large numbers of professional designers and others, as some of its earlier practitioners had intended, and even if it has been largely ignored by government.

Uncertainty the only certainty

That, though, is the past. Permaculture's history. This publication is interested in permaculture's future, its near future, because our common future is unfolding as substantially different to the past or even to the present.

I offer no solutions because in this near future we enter the realm of uncertainty. That is different to risk. With risk, we know the consequences of actions and can plan for them accordingly. Uncertainty in inherently unpredictable. Thus, all I do is pose questions.

Russ Grayson www.pacific-edge.info

Russ did his Permaculture Design Course in 1985 and later taught the course.

Trained and having worked in journalism, he is a member of TerraCircle Inc international development consultants and has been on the board of directors of Permaculture International Ltd, now Permaculture Australia. Russ assists with communications with the Australian City Farms & Community Gardens Network and the Australian Food Sovereignty Alliance.

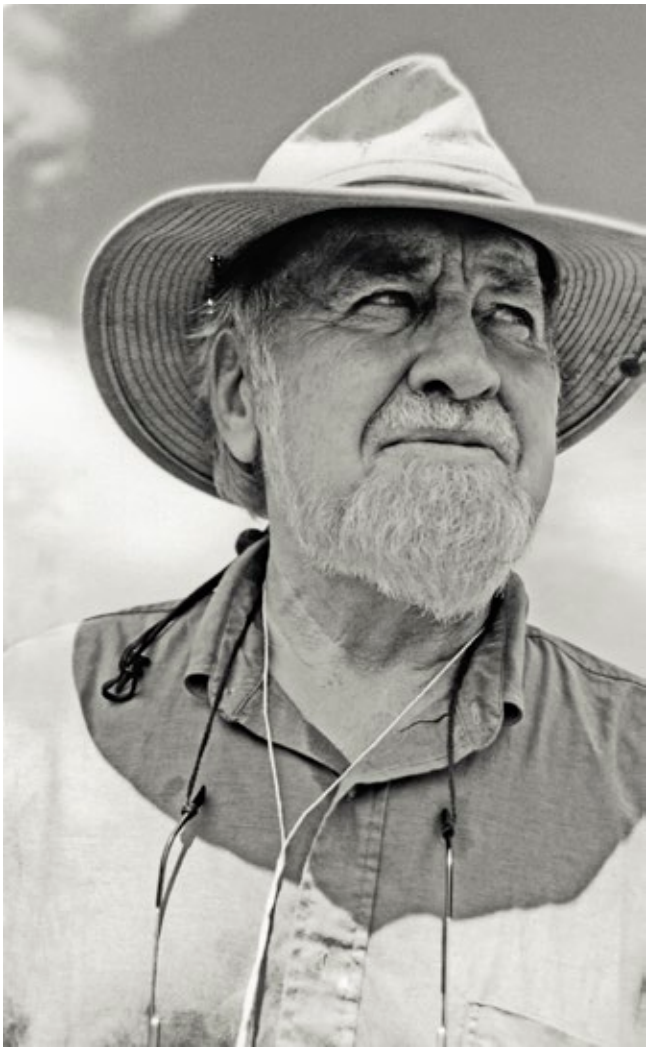
By way of definition

When people ask what permaculture is, I usually say that it is a system of design for resilient living, or something like that.

That's pretty broad, though, so sometimes I put it in the more contemporary terms people are familiar with in daily life. I say it's like a mobile phone.

A mobile phone is a platform of hardware and software upon which people develop useful and occasionally useless applications—apps. Similarly, permaculture is a platform made up of a set of ethics, sets of principles, ideas and characteristics upon which its practitioners develop a range of apps for use in city and country, on the land and in the home, for working with groups and for setting up your own community economies, among many more.

That's just one way of looking at it. There's no right answer. How you answer that question likely depends on how you apply permaculture.



1. THE JOURNEY

The story so far

Permaculture has pointed its practitioners to new ways, new territories, new opportunities and, for some, new life directions.

But how has it evolved over the years? How useful is it now for finding solutions both small and local and large and widespread? Let's spend a few paragraphs on the design system's history to think about that.

History is important because it can disclose why and how things are as they are. History demonstrates the importance of starting conditions—the ideas, the questions asked, the circumstances—that formed the environment around something like permaculture when it started. Those small things influence the evolution of the idea because they point it down particular pathways. Small things are important because they can have big effects later.

The design system we know as permaculture came out of the world of the 1970s in response to the changes and needs of that time. That was a decade of social change in the technological economies. In its last years, Bill Mollison and David Holmgren started to bring together, into a cohesive design system, ideas then current including technical knowledge from a range of disciplines and the new-society experiments and attitudes of the youthful 'alternative culture' (a predominately youth-populated social movement that sought to establish better, more co-operative ways of living in city and country as an alternative to those offered by mainstream society, and that was largely communal-focused in its approach). Since then, permaculture has evolved to meet new challenges as well as those that continue to trouble humanity.

Over the decades, permaculture practitioners have taken the design system down different paths. Some faded away, some came and went quickly, others morphed into mainstream activities now integrated into other bodies of practice, others remain within current permaculture practice. Consider, as examples, the community economics of LETS (Local Exchange and

Bill Mollison, co-inventor of the permaculture design system, went on to popularise permaculture in the decades after it was launched in Tasmania.

Trading Systems), permaculture in schools, Permablitz, permaculture in international development, permaculture and community food gardening, home gardening, the practice of bioregionalism, social (or 'ethical') investment, the idea of the roving permaculture educator, the permaculture 'green army' intervening to assist in natural disasters, and the rest.

More than anything, permaculture motivated people and this continues to be a phenomenon. It has given them a sense of being able to influence and change things on the small scale although it has yet to wield substantial influence at any larger scale. This is, in part, due to a critical attitude towards political engagement that is a legacy of its early days, specially the influence of Bill Mollison regarding large, oppositional, campaigning social movements and politics.

The catchyness of principles

The various sets of permaculture design principles offer a package of ideas for thinking and acting that have proven their usefulness in reframing problems as pathways to solutions and in other ways. They are catchy in the way they are stated, and the consequence is that they are sometimes recited in an uncritical way more like a set of commandments.

Bill Mollison, a co-inventor with David Holmgren of the permaculture design system, set out design principles that were later supplemented by David who articulated them in his book, *Permaculture-Principles and Pathways Beyond Sustainability* (http://permacultureprinciples.com/product/principles/)[1].

1 Permaculture—Principles and pathways Beyond Sustainability; 2002. Holmgren D. Holmgren Design Services, Australia.

David Homgren co-authored Permaculture One with Bill Mollison which, in 1978, launched the permaculture design system.

A product of the Western tradition

Permaculture is a product of the Western liberal democratic system with its freedoms of speech and expression, and would have been unlikely to have emerged from any other political system because it questions the status quo and proposes change. Thus, and although permaculture has spread globally over the nearly 40 years of its existence, its has a low profile or is absent as a social movement in nations with authoritarian, undemocratic regimes. Cuba during its Special Period is the exception because, due to food shortages, permaculture's design and agricultural approaches proved of value.

Permaculture's evolution is the legacy of almost 40 years of development in these countries, but the world has changed profoundly since permaculture's birth on the distant shores of Tasmania, Australia's island state. Economies, polities, cities, social attitudes, science and technology, communications, natural systems and so much more have changed substantially. Things are no longer as they were. There has been an underlying change and it perplexes many of us.

And so, with all this change, we must ask this: for the permaculture design system, what comes next?

Seeking influence

It was to be able intervene in these changes sweeping the nation, the world and our neighbourhoods that, in 2010, participants at APC10—the tenth national convergence of permaculture practitioners on the tropical uplands of Far North Queensland's Atherton Tablelands—recognised that although there was a large number of people practicing permaculture individually and through community associations, they lacked a cohesive voice and were subject to local government and other regulators with whom they largely lacked any representative voice or influence.

...technologies, sciences, politics, economic changes, social attitudes, social movements and so much more that started in those decades have brought us to where we are now...

Permaculture practitioners and designers could create good things in public places but the fate of those projects remained at the whim of the various levels of government policy, regulation and landuse priorities as well as public and media opinion. Thus, they remained vulnerable. There was no means of expanding permaculture's circle of influence beyond the local level.

Those at the convergence wanted a voice to move beyond the perplexity that many felt. That perplexity, however, was anchored in the big picture trends that have been reshaping modern societies since the mid-1950s.

Working within our circles

A value of the permaculture design system has been to focus the thinking of its practitioners on big picture issues like food security and food sovereignty, energy systems, access to fresh water, the construction of energy efficient shelter and personal and community approaches to obtaining other life necessities, and to stimulate small, local initiatives around securing these things. You might recognise some of these as the same as in Abraham Maslow's well-known hierarchy of needs.

Thinking about these things might start within our circle of concern, however they are often too big to effectively act on at the individual level. Somehow, we need to take them into our circle of influence where we can work on solutions with others similarly motivated.

Permaculture practitioners commonly do this by joining permaculture community associations that might go on to develop solutions locally. Setting up community food gardens for urban people without their own land is an example of expanding our circle of concern into our circle of influence, although community gardening made its start and evolved largely independent of permaculture but sometimes with permaculture-trained people involved.

That's an example of acting locally, and local solutions like that are the work of a substantial although uncoordinated number of practitioners across the country. In this way permaculture has evolved as numerous local activities without coalescing into a unitary social movement around any single organisation.

2. NOW IS DIFFERENT

The world today, and the world we are heading into, is no mere extrapolation of the past. Now is substantially different to the world of the childhood, school years and young adulthood of many in their middle or later adult years. Somewhere, we crossed a divide and find ourselves on the other side, a place where things are different, a place where rapid change and reconfiguration of societies, economies and ways of life are the defining characteristics.

For many, finding themselves here, in this place so different to that of their youth or young adult years, is surprising. Others, though, open to the trends and influences that shape societies, can trace how we got here. They see change starting in the mid-to-late 1950s and picking up through the 1970s and 1980s. They see how technologies, sciences, politics, economic changes, economic growth and development, social attitudes, social movements and so much more that started in those decades have brought us to where we are now.

Its practitioners continue to seek a place for the permaculture design system in this emerging world. In doing this, they ask awkward and sometimes challenging questions of themselves:

- does the permaculture we know still offer a useful set of tools to civil society to effect positive change?
- has permaculture settled into its own comfort zone and is it reluctant to step out of it?
- is permaculture ready for a makeover to update it for the contemporary world and to better appeal to younger generations?

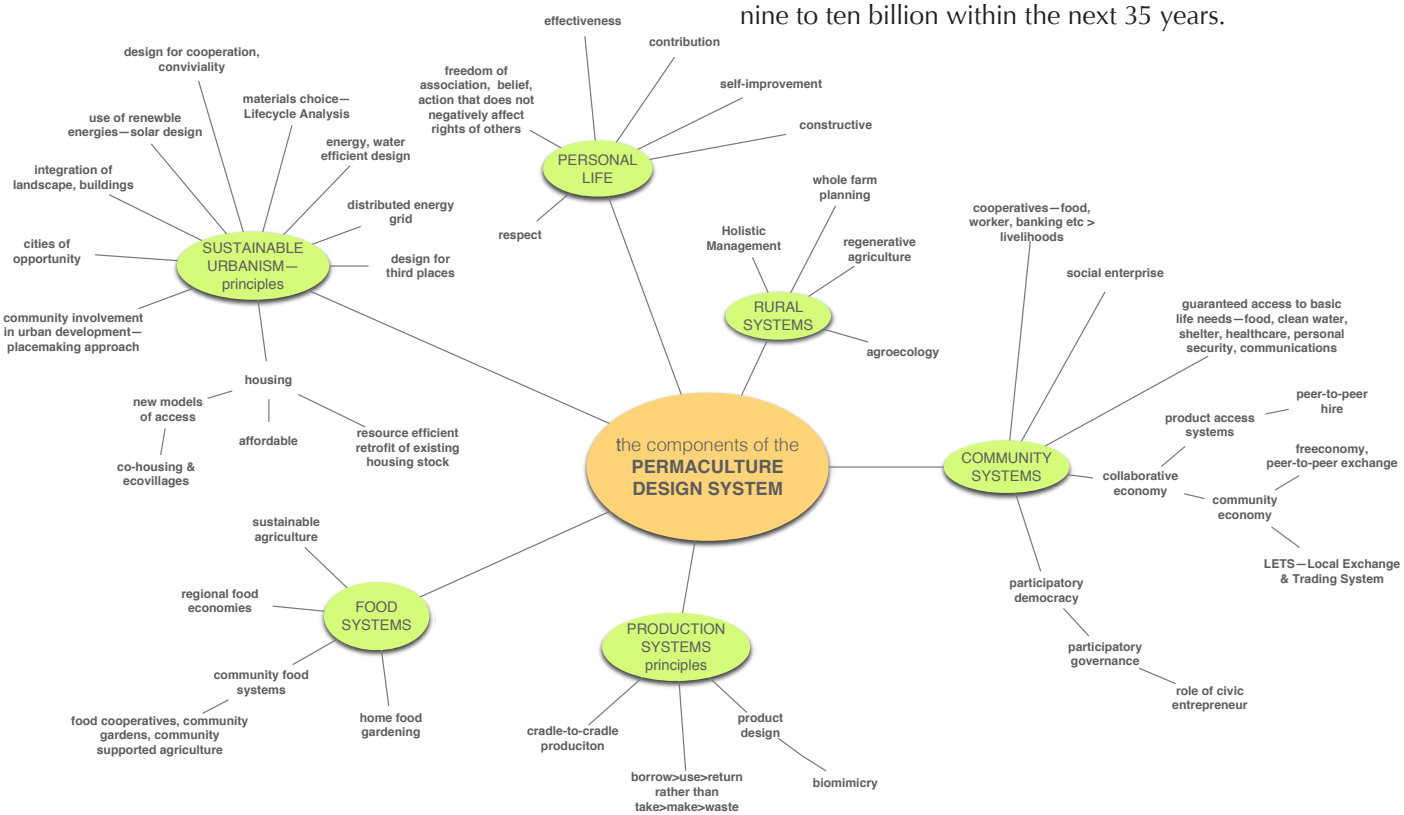
There are more questions, too, but those about the future of the design system are the most probing.

Permaculture today is the legacy of almost 40 years of development. But what comes next? To think about that we need to context permaculture within the great global trends that brought us to this point in time and that continue to shape our world.

A world of accelerating change: how did we get here?

In our imagination, let's journey back to the mid-1950s.

Recovered from the demands of the Second World War that unleashed new technologies and great productive capacity, the world moved into a new phase of development as the use of resources such as minerals, oil, nuclear fuels, water, timber and so much more accelerated. At the same time the population started to grow rapidly, from three billion in the 1950s to today's more than seven billion and now headed for around nine to ten billion within the next 35 years.



Science, too, brought its own acceleration in knowledge and was put to practical use through new technologies. In the period from the mid-1950s to the end of the following decade, humanity came to understand how matter and life itself was structured at the smallest of scales and how vast and unexpected the cosmos was. The invention of the transistor launched a revolution in electronics. Medical research brought diseases under control and old diseases like polio were soon on their way to extinction thanks to widespread vaccination. Herman Borlaug's work on the new technology of high yielding crop varieties started to pay off as food production increased with the Green Revolution, promising a reduction in the number of hungry people on the planet.

In those years humanity became a space-faring species with the first orbital flights and the later expeditions to the moon and back. We launched an era in which space travel, recently only by robotic vehicles, would bring us a flood of new knowledge about the Earth and its planetary system, about distant parts of the cosmos and our place in it, and about the state of our planet. The volume of knowledge grew rapidly as did the amount of it that was published. That hasn't ended. It too has only accelerated.

Those times brought an end to the old colonial system as the decolonisation movement swept the world. New nations emerged, some after wars to liberate them from their old colonial powers and some falling into internal conflict as different social groups that had lain dormant during the colonial period vied for political power.

But other factors started their own acceleration in those decades—environmental pollution, soil erosion, global population, the production of wastes and the consequent pollution of soil, waterways and air, the loss of agricultural biodiversity, the growth of cities and expansion of the area of the planet—the land surface and the seas—used to support humanity. Many of these were unexpected, some were the byproduct of the new technologies that emerged in the post-World War Two period.

...by the new century this acceleration in almost everything—humanity's use of resources, human impact on natural systems, scientific understanding, communications, the spread of education, improved health, technology and the pace of life itself had increased even more, and still it accelerates...

Following decades continued this acceleration in scientific knowledge and technology, in the problems they inadvertently created and the opportunities they made possible.

Change—it's time

It's time—that was the slogan and the Helen Reddy song that brought the Whitlam labour government to power in 1972, and in which was embodied the aspirations and the impatience with decades of conservative government of a new generation that came of age in that and the following decade.

That generation wanted action. They first created the alternative culture as a constructive social movement, then started the environment movement of the latter decades of the Twentieth Century that was so influential in Australia in its time and that set the social mood for the environmental management industry that would emerge in the final decade of the century. Permaculture, too, emerged during this period, growing out of the background of social change and experimentation and a desire to find better ways to live.

In the eighties a socially-strange combination of technologists and counterculture types ('counterculture'

is a term used synonymously with 'alternative' to describe the social movement searching for alternative ways of living in the late 1960s and 1970s) mashed-up the values of the alternative movement with the science of cybernetics and electronics to create the first personal computers and launch the digital revolution[2]. Things were moving fast, there was a sense of newness and change. Humanity's influence on the Earth was growing and deepening. Things were accelerating.

The acceleration continues

Urbanisation is another of those accelerations we are currently experiencing, one that we see in the form of urban sprawl and the growth of highrise living and, in some places, as growing rings of informal, spontaneous dwellings around major cities, which are where the bulk of our coming population growth will live. Today, over half the world's people live in urban centres (from less than a third in 1950) and that number will increase to three-quarters of humanity by mid-century as global population reaches the 9.5 to 10 billion mark. The number of megacities, those home to more than ten million people, was 22 as of 2015 and is increasing to an estimated 30 or more by 2025. Some suggest that now is the time to change humanity's scientific name from Homo sapiens to Homo urbanicus (urban humanity).

...permaculture, as an approach to design, calls upon the findings of science and makes use of its technologies, firmly embedding the design system in the pro-science side of things...

By the new century this acceleration in almost everything—humanity's use of resources, human impact on natural systems, the area of land used to provide humanity's food and other needs, scientific understanding, communications, the spread of education, improved health, technology and the pace of life itself had increased even more, and still it accelerates.

Now, the human enterprise is visible across economies and societies as well as across vast, transformed landscapes. In it, people feel either disoriented or they thrive amid the cascade of new technologies, new insights, new ideas and change. They are fearful or exultant. They feel alienated or at home. It is a global phenomenon and those Western nations that initially led the acceleration have been joined and sometimes overtaken by newcomers like China and India.

Reaction

A pervasive disorientation and fearfulness around the rate of change makes people look to the past as some kind of desirable space where things were better. Some things probably were, but in that past lay rampant diseases, famine, lack of education and limited mobility both spacial and social. We see this uneasiness with the contemporary world in anti-science attitudes where people are prepared to believe the quasi-mysticism and borrowed philosophies of the New Age movement of the eighties and nineties, in the all-too-easy answers of religions, in climate change skepticism, in spurious health claims, in the fear around industrially-produced foods.

Some prefer to believe spurious assertions rather than the preponderance of evidence and scientific consensus. Worse, anti-science beliefs have built into a political ideology that denies the undeniable and that seeks power. Yet our societies are built on the work of science and putting that work to use through technologies. It is through the scientific method that we can test our beliefs and assumptions and come to know what we believe to be true or false has a very high probability of being that.

Some of those anti-science or science-denial beliefs have had currency among permaculturists at times. But Bill Mollison warned against them in the nineties in his criticisms of the New Age movement (which he referred to as "woo-woo"). Permaculture, as an approach to design, calls upon the findings of science and makes use of its technologies, firmly embedding the design system in the pro-science side of things.

2 From Counterculture To Cyberculture. 2006. Turner F. University of Chicago Press. USA.

The light of planetary dominance

If you want to see a graphic, symbolic representation of this acceleration in the human enterprise and humanity's domination of the planet you need look no further than NASA images of the Earth's night side. Here, you see what the crew of the International Space Station looks down upon—glowing clusters of cities and towns and the lines of lights that join them.

> **...images of Earth's nightside bring home the extent of this acceleration in human affairs and the corresponding human domination of planet Earth...**

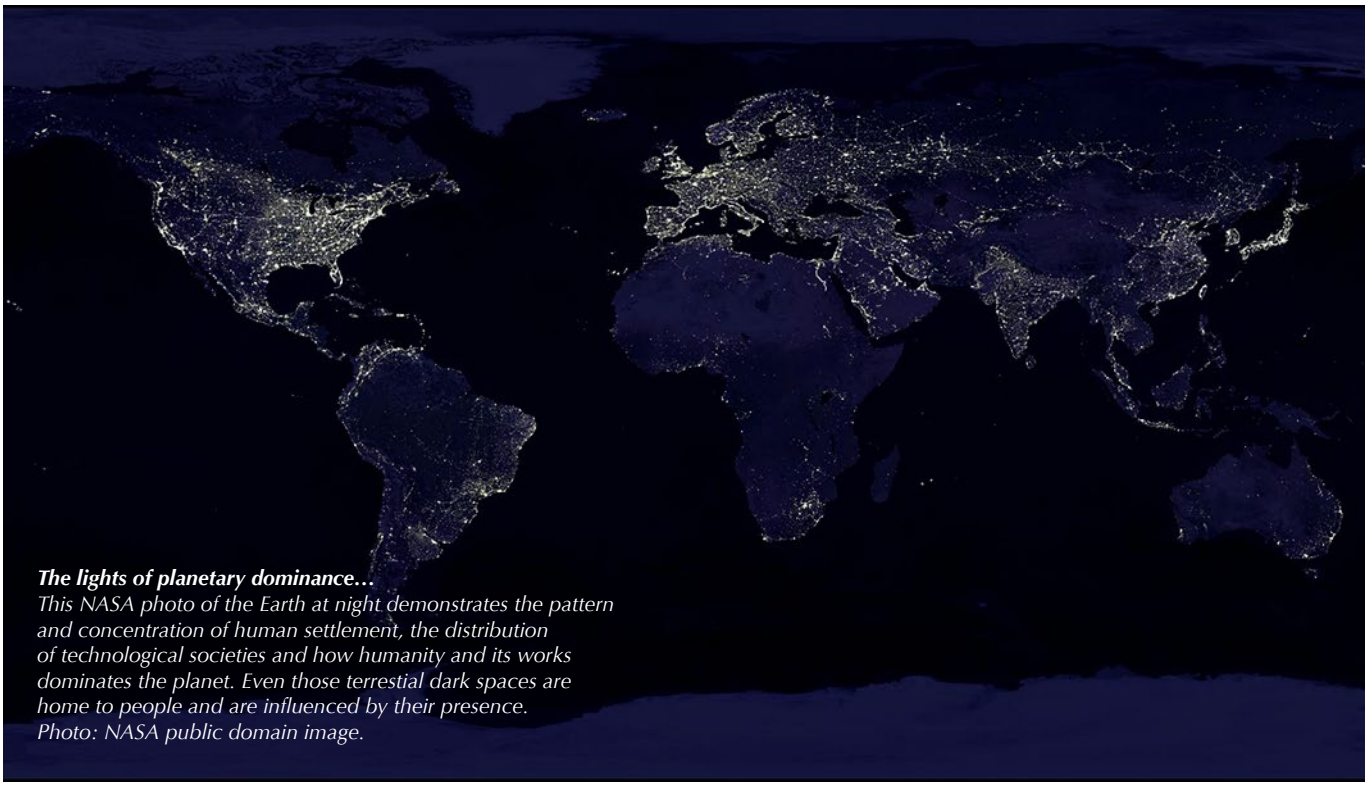
The view of the Earth below looks much like a network diagram because that is what it is—the great network of human habitation spanning the surface of our home planet. As Stewart Brand of *Whole Earth Catalog* and personal computing fame said, the view from orbiting spacecraft reveals Earth's nightside shining with cities that glow back at the heavens as once heaven's stars shone down upon the Earth.

Those NASA images of Earth's nightside bring home the extent of this acceleration in human affairs and the corresponding human domination of planet Earth—the accelerating growth in the extraction of minerals, of population numbers, of energy and fresh water use, of natural resource extraction and the corresponding growth in food production, scientific knowledge, pollution and attempts to control it, technology development, renewable energy systems, computing power and our global, online access to information, knowledge and communication we know as the internet. These, along with the acceleration in urbanisation, telecommunications, space technology, synthetic biology, life sciences, particle physics, automation and robotics in the workplace, oceanic acidification, depleting fisheries, networked global communication, atmospheric warming, economic growth and development and so much more.

Clearly, this emerging world is not the world of the Twentieth Century. Nor is it the world when Bill Mollison and David Holmgren unleashed permaculture as a synthesis of good, practical ideas and as a beacon of hope flashing its message across a world in need of solutions. It is not the world when Bill Mollison published *Permaculture—A Designers' Manual*[3].

This quickening of almost everything, this accelerating pace, has given a name to the period from the mid-1950s to the present time — **the Great Acceleration**.

3 Permaculture—A Designer's Manual. 1998. Mollison B. Tagari, Australia.



The lights of planetary dominance...
This NASA photo of the Earth at night demonstrates the pattern and concentration of human settlement, the distribution of technological societies and how humanity and its works dominates the planet. Even those terrestial dark spaces are home to people and are influenced by their presence. Photo: NASA public domain image.

It is this Great Acceleration that is now shaping the world we live in and that will likely shape the near future. It is the world on now. It is where we live. Now is different.

On into the Age of Humanity

We, humanity, have transformed around 40 percent of the Earth's terrestial surface for agriculture and urban development, agriculture accounting for the greatest changes (Stockholm Resilience Centre, University of Stockholm).

> **...there is no wilderness untouched by humans... there are no ecosystems uninfluenced by people and their activities...**

Much of what we don't use intensively is mountain, desert or inhospitable tundra, but even here humans engage in activities such as small scale farming, transhumance (the seasonal grazing of animals) hunting and resource extraction to sustain their communities and economies. The reality now is that there is nowhere on the Earth's surface that is free of human influence. There is no wilderness untouched by humans. There are no ecosystems uninfluenced by people and their activities. Now, it might be more useful to talk less of the Earth's environmental systems and more of its socio-environmental systems.

Our use of planetary resources doesn't stop at the shore, for we have expanded our exploitation of the seas and their fisheries to the extent that some of those fisheries have collapsed and others are now some distance toward following them. At the same time, a warming climate is making the seas more acidic and that could reduce the viability of the fisheries even more and directly affect the millions of coastal peoples who rely on the oceans for their sustenance.

A deep human influence

One of the drivers affecting the human prospect and our common future is population growth. We were three billion people at the start of the Great Acceleration in the mid-1950s and now we're seven billion and on our way to at least nine billion, probably more, by 2050. But it is not just numbers. It is about affluence—as more people enter the global middle class their impact on our earth systems increases. They use more resources and produce more waste.

Some years ago, the relationship of these things was encapsulated in the formula:

I=PAT

Impact = Population x Affluence x Technology.

Population and affluence are presently globally upward trends and are likely to continue so for some time, barring some serious economic collapse following the recent and continuing period of regional (eg. the financial crisis in Greece, Spain and Italy) and global economic instability (2006-2008).

> **...Technology made large populations possible. Large populations now make technology indispensible...**
>
> *Joseph Wood Krutch…*

Technology is the variable in this equation in the present situation and it can worsen or reduce the negative human impact on our earth systems. It gives us a point of intervention, of leverage, in the system that is achievable in the present political and economic circumstances, yet it is not a complete solution and at best can buy us time to introduce social, economic and political measures to adapt to the warming climate that will shape our near future irrespective of any longer term measures we may introduce to ameliorate later warming.

Technological determinism brings a narrow focus on technology and ignores the influence of social, economic and political influences in shaping our society. Yet, technologies do have a profound shaping influence in modern societies. It was the American author and

naturalist, Joseph Wood Krutch, who summed up the mutualism of technology and population when he said that "Technology made large populations possible. Large populations now make technology indispensable."

Humanity has made major modifications to our earth systems—the biogeological, oceanic and atmospheric system such as the hydrological cycle (water), chemical cycles (the carbon, phosphorus, nitrogen cycles etc) and climatic systems—to the extent that, if pushed further, conditions could flip into a new and irreversible stable state.

The planetary boundaries beyond which that state lies have been identified by the Stockholm Resilience Centre:

- the larger boundaries of climate, biodiversity and oceanic acidity
- the slower boundaries of landuse, fresh water, nutrient cycles, aerosol loading of the atmosphere and novel entities (new chemical substances released into the environment).

The landuse, oceanic and fresh water boundaries link directly with food production. To overstep them risks taking us into unknown territory, well beyond the conditions prevailing during humanity's rise to a global civilisation.

A step into the unknown

Our epoch, the span of time in which we live, the Holocene, followed the Pleistocene glacial era. The Holocene started around 12,000 years ago with a warming of the atmosphere and the melting of the Pleistocene's icecaps and glaciers and it continues to the present but not, perhaps, into the future.

A time of benign climatic conditions, mild summers and cool winters, reliable wet and dry seasons, the Holocene offered the opportunity for hunter gatherers to become farmers with the development of the Agricultural Revolution around ten to twelve thousand years ago, more or less simultaneously and in isolation in four different places. It made possible the rise of great empires such as those of ancient Egypt and the Middle East, Central and South America, classical Greece and imperial Rome and, around 300 years ago, it made possible the rise of the Industrial Revolution which, in turn, gave rise to the Digital Revolution and our global civilisation—and the Great Acceleration.

Sustainability—no longer achievable?

The possibility of being able to achieve 'sustainability' is now being questioned by people who study human development and earth systems.

They say that the idea of sustainability requires the existence of a more or less stable state with boundaries within which social and natural systems can fluctuate.

This kind of stability might no longer be achievable and it becomes less likely as we move into a future with changed climatic and oceanic conditions.

It might be that planetary boundaries may well be exceeded.

Rather than try to create a state that would be difficult or impossible to achieve and maintain in the face of global perturbations and instabilities, perhaps we would do better by creating systems, including cities and communities, that are resilient in the face of the uncertainties and perturbations now pushing and pulling at the earth system and at our social systems.

It may be time to replace the concept of sustainability with the concept of resilience and create systems that can dynamically resist and bounce back, adapt and reconfigure when faced with pressures that may take us across planetary boundaries.

If we cross those planetary boundaries the earth system may reconfigure into some new stable state from which return to pre-existing conditions might not be possible.

What that new state might be, we cannot tell for that lies in the realm of uncertainty, and that cannot be predicted.

Thus, the systems we set up to support our societies, economies and cultures need be dynamic in their operation and adaptive to change. They need be resilient.

The possibility of synchronous failure

In his book, *The Upside of Down*, Thomas Homer-Dixon lists a range of societal vulnerabilities:

- uncertainty over the availability of future energy sources such as oil
- population growth
- availability of fresh water for farming, industry and cities
- regional effects of a changing climate such as changes to rainfall patterns and monsoons, oceanic acidification and fisheries
- economic disparity—widening income and wealth gaps in all countries
- declining environmental services useful to people such as water filtration and storage in aquifers, air filtration, atmospheric humidification and regional rainfall, soil stabilisation and more
- declining agricultural and natural biodiversity
- uncertainties over the global food supply and food security.

Homer-Dixon writes that synchronous failure—the failure or worsening of two or more of the trends he identifies—could overstretch our recovery efforts through a number of multipliers:

- the connectivity brought by global digital communication to rapidly spread news and the impact of events, leading to panicked rather than reasoned responses, and to reduced public confidence in the ability of civic authorities to cope
- physical connectivity in the form of rapid global air travel that could spread the disruption brought by global communications as well as spreading diseases
- the ability of small groups to inflict substantial damage through criminal activity and terrorism through attacks on vulnerable economic, transport, social and environmental systems
- the capacity of organisations, black-hat hackers, proxy organisations acting for governments and governments themselves, either though surreptitious attacks or cyberwarfare, to disrupt critical systems and affect national economies, emergency services, industrial and critical control systems as well as civil society (eg. the Stutrnex computer worm attack on Iran's nuclear industry).

Vulnerabilities: four drivers of our futureworld

Australian global security analyst and author of the book, *Out of the Mountains*, David Kilcullen, identifies four drivers shaping our world:

- rapid population growth, especially in lesser-developed-countries
- accelerating urbanisation, with around 55 percent of the global population living in cities in 2014, up from 34 percent in 1960 and anticipated to reach around 75 percent by mid-century
- urban littoralisation, with most big cities on coastal plains
- accelerating interconnectedness, with populations now globally connected and networked, with individuals and organisations tapped into global flows of information; people self-organise into networks despite the ineffectiveness of their governments.

Kilcullen writes that we need to focus on resilience rather than seek a stable, sustainable state that may not be achievable.

The Holocene, to borrow from the astrophysicist, cosmologist, author and science communicator, Neil deGrasse Tyson, is the story of how bands of hunter gatherers came to journey to the stars.

Climate change is humanity's great though unintentional experiment. It alters the planet's benign climatic regime of the Holocene (the recent epoch) that allowed civilisations to develop and flourish, changing it into something altogether different and altogether unknown.

The number, 450ppm, is the concentration of greenhouse gases that is put at the point beyond which we risk a very dangerous temperature rise and the consequences that would bring. The dilemma is that we reached 450ppm for all greenhouse gases in 2014[4]. The path we're heading down is toward 560 ppm and beyond, a four degree Celsius temperature rise, way beyond anything that science says is safe, way beyond the benign temperature regime of the Holocene that made humanity's civilisations possible.

The resilient earth system

Holocene conditions are humanity's only safe operating environment and may be the only living space within which we can prosper. Those conditions evolved thanks to of the resilience built into the earth system.

The Earth system (and other systems like economic and social systems) resist change and, when change affects them, they try to bring conditions back to some point of dynamic equilibrium, a more or less stable state. But there are limits to this and, pushed too far too often, systems reach an inflection point, a threshold or tipping point where they flip into another stable condition different to the past and from which it may not be possible to go back.

We now know that, rather than incremental slow change, systems are stable for great lengths of time then undergo abrupt change. You can think of it as a punctuated equilibria, periods of stability punctuated by short bursts of rapid change after which the system flips into a new state.

4 Stockholm Resilience Centre.

...the definition of a tipping point is when a system fundamentally changes structure and function, and settles into a new stable state...

Stockholm Resilience Centre

We can no longer exclude the possibility of abrupt, sudden changes to our earth systems. For the past 12,000 years we have been living in a time of stable climate. Temperatures have varied little and reliable rainfall patterns have combined to create biomes and environments that facilitated the development of human cultures and civilisations. Now, with climate change being pushed along by the Great Acceleration, is this relatively stable period likely to flip?

Humanity now has a substantial and dominating influence on earth systems, the great cycles and processes that together make up the Earth's operating system. It is the Great Acceleration that makes humanity's influence equal to that of a force of nature. Consequently, scientists and others propose that we recognise this by naming a new epoch for humanity. This new epoch they call the Age of Humanity—**the Anthropocene**.

New epoch, new opportunities

Naming a new epoch opens our minds to the realisation that much of what saw us through the Twentieth Century is not what will carry us successfully through the Twenty First. How we have done things is less and less useful. A new epoch is a new opportunity to reimagine and reinvent global and local cultures and technics, to find better ways of doing things, to create better ways to supply humanity's needs and to build a better, more relevant permaculture capable of addressing emerging challenges and those things that trouble people in their daily lives.

The arrival of the Anthropocene leads us to question and reconsider things like environmentalism (and whether its focus to date is still relevant in an era when human influence is so substantial and reaches

everywhere), and ideologies (and the relevance of last century's ideologies like capitalism, socialism, communism, fascism, free markets and the rest).

It even leads us to question the timeliness, relevance and usefulness of permaculture's own principles:

- are they still sufficient?
- are they too small and slow?
- do they need tweaking, restating or replacing to better fit emerging conditions where things change rapidly?

Adopting the term, Anthropocene, does not carry values of good or bad. It merely describes a new epoch with its emerging characteristics.

We now have the opportunity to ensure that our earth systems can support humanity into the future. In the past, this idea has been called 'stewardship', the stewardship of the natural resources of the Earth. It was the polymath, Buckminster Fuller, who hinted at it in his 1968 book, *An Operating Manual for Spaceship Earth*[5] and it is an idea explored by successive thinkers.

But I think calling it 'stewardship' is too mild a word to describe what must be done. Stewardship implies a resource maintained within fixed boundaries and the existence of a more or less stable environmental state. Like the much-used, much-abused concept of sustainability, it is questionable whether a stable or even a semi-stable state would last long in the era of dynamic and sudden, unexpected change that is the Anrthropocene. Stewardship? What we must do in the Anthropocene is far more vigorous.

...not running away from our role and responsibility as terraformers, but rather grasping that role and doing it better is what we now need...

Above: Landscape architect and permaculture educator, Steve Batley, talks soils at a permaculture course in the Permaculture Interpretive Garden at Randwick Community Centre in Sydney's Eastern Suburbs.

Below: Julie Gaul from the NSW Early Childhood Environmental Education Network preparing for International Permaculture Day at Randwick Community Centre.

5 http://en.m.wikipedia.org/wiki/Operating_Manual_for_Spaceship_Earth

In the *Whole Earth Catalog*, Stewart Brand put it this way: "We are as gods and should get used to it"[6]. I like to paraphrase Stewart's statement this way: "We are terraformers and should learn to do it properly". Why? because terraforming is what humanity has been doing and we are doing it badly.

The term originally described the idea of transforming the geological and atmospheric systems of other planets to make them habitable by humans. My use of the word is defined to mean changing the earth systems that sustain us to make our own planet more suitable for continued human life.

We have run our own terraforming experiment since the Agricultural Revolution and now farms cover vast landscapes as can be seen when overflying farming regions. Farming has transformed landscapes, displacing natural systems and the modifications to them brought by indigenous peoples. Those earlier modifications, too, can be seen as terraformed landscapes created by indigenous peoples to support themselves, frequently through the use of fire to select particular suites of plants that attracted wildlife that could be hunted, to encourage the growth of edible plants and to keep open movement corridors.

...the flow of energy through a system acts to organise that system... from the cover of the 1968 edition of the *Whole Earth Catalog*, quoting American biophysicist, Harold J. Morowitz.

(The Whole Earth Catalog was described in Red Pepper, a magazine and website of green and libertarian politics in this way: "The Catalog's influence was immense. It was one of many features of the Californian counterculture that prepared the way for the web and internet".[7])

We started to inadvertently terraform the planet in earnest with the Industrial Revolution and we continue to do so today. But we don't have to keep doing it badly because, for the first time, present generations have become aware of what we have been doing. And with that knowledge comes the option to continue or to improve it.

Not running away from our responsibility and role as terraformers, but rather grasping that role and doing it better is what we now need.

6 http://www.wholeearth.com/issue-electronic-edition.php?iss=1010

7 http://www.redpepper.org.uk/we-are-as-gods-the-legacy-of-the-whole-earth-catalog/]

3. DOING IT PROPERLY... WHAT OPPORTUNITIES FOR PERMACULTURE?

The question for permaculture is this: As the Anthropocene unfolds, what role will the design system play? What role will we as individual permaculture practitioners and members of permaculture and allied organisations play?

Let's look backwards a little to consider how permaculture itself emerged, in part, out of a crisis of its time. That was the oil crisis of 1973. As David Holmgren has said, the oil crisis was a stimulant in the development of the design system, one of the things that went into the social, technical, economic and political mix that formed the intellectual background to the emergence of permaculture.

The oil crisis came about when the Organisation of Petroleum Exporting Countries reduced exports of oil to the West because of Western support for Israel in the 1973 war in the Middle East. The result was a shortage of oil fuels in the West, with petrol being rationed.

That stimulated the idea of energy self-sufficiency in the West and in its own way expanded the interest in renewable energy systems that were already being tinkered with by participants in the alternative subculture.

The oil crisis, though it had a big economic, political and social impact at the time and whatever influence it had on the thinking that led to the permaculture design system, was only a blip in the larger pattern of increasing resource use, the transformation of technologies and lifestyles and the growing human dominance of the planet that was the Great Acceleration.

Participatory placemaking planning…
People from the local community and local permaculture groups participate in a process to create ideas on how the Randwick Community Centre and the Permaculture Interpretive Garden might be used.

The crisis and its influence on the development of permaculture demonstrated that permaculture could have a role in responding to contemporary events like the changing conditions we find in the Anthropocene.

How would permaculture intervene?

Characteristically, permaculture intervenes at the micro scale of small projects carried out by individuals in their household or as community projects. These can be effective at their scale, however they are often local in structure and do little to ameliorate the causes that make them necessary. That is more the role of the advocacy or campaigning organisations that have in the past been much-derided by permaculture leaders who say they focus on what they don't want rather than building those things they do want. That's only a partial truth, however the polarisation between the two modes of action can be divisive. They are better seen as distant poles on a continuum of strategies and tactics for creating positive change.

Although permaculture projects are commonly small and local, some of the solutions to global warming that have been proposed by permaculture practitioners and others are terraforming technologies, examples of geoengineering—the deliberate changing of earth systems that would alter the atmosphere and biogeological cycles.

Consider permaculture's idea of massive reafforestation. Done at any huge scale, reafforestation becomes a geoengineering technique. Why? Because large forest systems humidify the atmosphere, producing rain which itself modifies the biomes and environments it falls in, creating opportunities for wildlife and for human inhabitants.

Others are the organic and carbon-farming systems favoured by permaculture designers. At scale, their influence on earth systems would come through combining substantial amounts of carbon into soils, removing it from the atmosphere over time and thus influencing the composition of both the atmosphere and agricultural soils.

In this way, permaculture has inadvertently been promoting a role for itself in the Anthropocene, but generally its role is limited to quite a small scale of implementation and lacking has been developing new landuses and technologies to directly address the emerging Anthropocene conditions. Most of permaculture's proposals for development are local in scale and at some point all development is local. The question is how do we scale-up the local so that it becomes global?

Plotting a course

Just as the Anthropocene introduces the potential for a new mindset for humanity and its activities, a new way of thinking based on the realisation of our dominating influence on our earth systems, so too does it offer a refreshed role for the permaculture design system and the practitioners who enact it.

To imagine this renewed and refreshed role we need to understand what permaculture has become after nearly 40 years of evolution. What is it now and what does it look like? What is its shape, its motivations, its contents, its drivers? What accumulated experience does it hold in its scattered memory banks? What travels along its communications channels? How does it turn ideas in the minds of its practitioners into things in the 3D world? What condition is it in? Has it drifted away from its original course and is this a good or bad thing?

> **...it is estimated that one-eighth of the surface of the Earth is suitable for humans to live on: three-quarters is covered by oceans while half of the land is either desert (14%), high mountains (27%) and other unsuitable terrain...**
>
> ***http://en.wikipedia.org/wiki/Earth#Natural_resources_and_land_use***

We have already seen that permaculture has been adopted as a technology primarily for use by civil society, as a body of knowledge synthesised into a coherent system of design and adopted mainly by individuals and organisations operating in the voluntary community sector. This is good in the sense that it makes permaculture a grassroots social movement. It

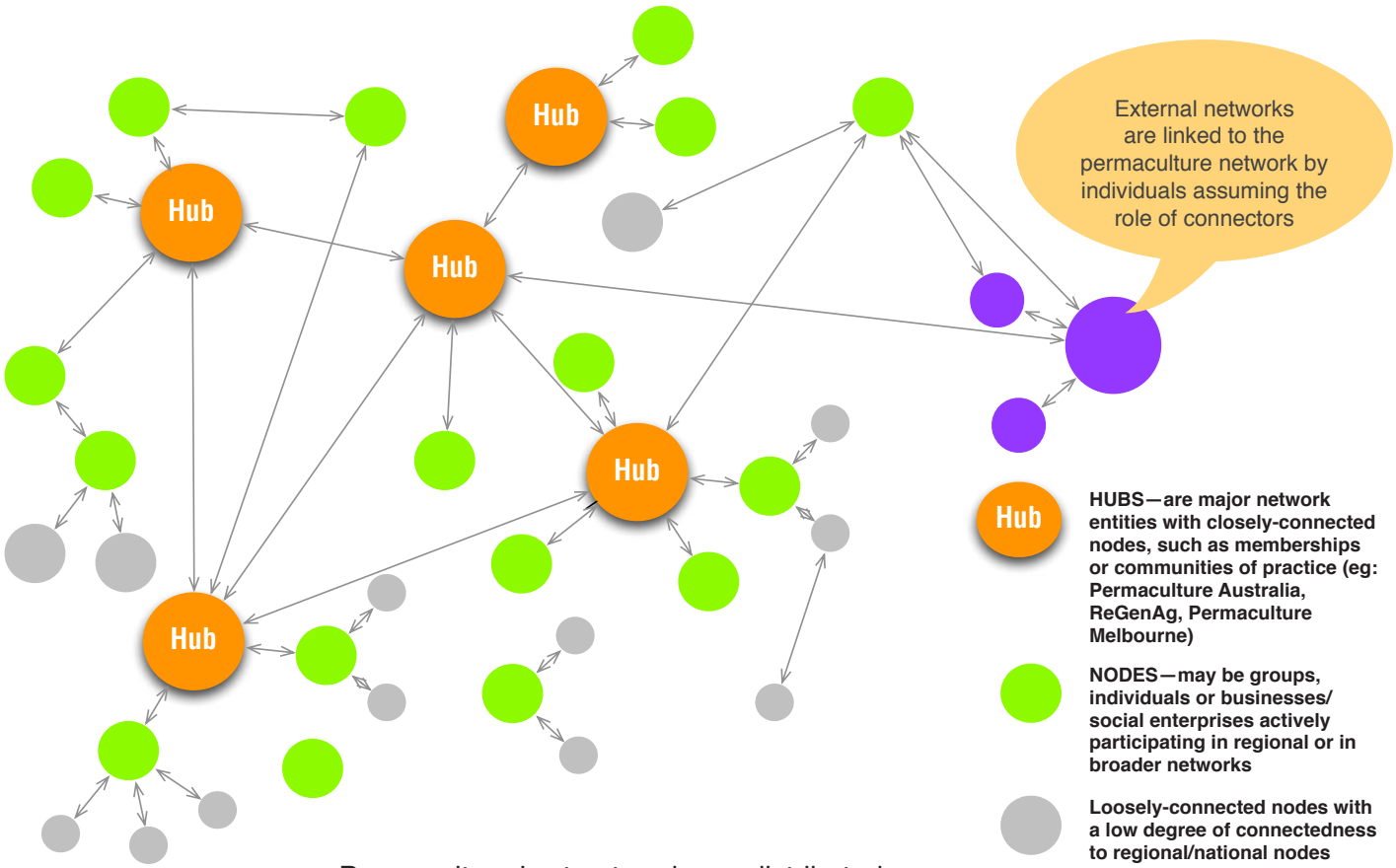
is a disadvantage in the sense that the design system lacks a presence and credibility among professionals and institutions because it has focused its development within the informal, community sector. It distributes permaculture at one level while marginalising it at another.

It was Bill Mollison and David Holmgren who originally described permaculture as a synthesis combining knowledge and insights drawn into a system of design from fields as diverse as biology, horticulture, architecture and building, ecology, anthropology, sociology and more. Now, thanks to complex systems research and research into the structure and functioning of networks, we have to add network science to that list. It is David who has spoken most of permaculture as systems thinking, as applied systems dynamics, and networks are a part of that.

Permaculture was not the first to think this way, for it was in the 1960s that Buckminster Fuller developed his idea of Whole Systems Design. In that decade and the previous, the development of cybernetics by American mathematician and philosopher, Norbert Wiener, was starting to have an influence. It influenced the ideas on ecology of Howard T Odum, whom David Holmgren speaks of, although Odum's approach has since been criticised as somewhat mechanistic and less useful thanks to newer knowledge.

To define permaculture's present structure we call upon network science, the knowledge bequeathed to us by the fields of complex systems studies and digital culture that has led us to a better understanding of how things as diverse as ecosystems, economies, markets, the human brain, bands of friends and ideas work and spread.

We now understand, though we didn't when permaculture was first unleashed, that the overall structure of the design system is that of the network, and that this may be the key to its further spread and influence.



Permaculture is structured as a distributed network of individuals, associations, and projects linked by flows of communication

THE NETWORK EFFECT: The value of a network is proportional to the number of nodes and to the degree of connection between them.

Permaculture as nested networks

The usefulness of networks is summed up in what is known as the 'network effect': **the value of a network is proportional to the number of nodes and the degree of connection between them.**

This suggests that networks with more active users are more likely to yield useful connections, information and access to knowledge. It all depends on the number of people actively using that network. In networks, participation is the important characteristic.

We can picture permaculture as organisations and individuals scattered across the country. These are what we call 'nodes' and they are sometimes connected to each other by links of personal friendship, online connection or organisational membership.

There are nodes that have a lot of connections to other nodes and these we call 'hubs'. They are often permaculture educators who form their own networks of past students and others who follow them. Think of Permaculture College Australia, Milkwood Permaculture, Permaculture Research Institute. It's a network effect that well-connected hubs are more likely than lesser-connected hubs to experience a disproportional increase in the number of nodes connecting to them, what is called 'preferential attachment'.

These well-connected hubs have their own networks in which individuals are more likely to know each other. Two individuals might be speaking and one mentions someone they know in the network. "Oh, I know her. Small world, isn't it?". Because of these close connections, networks of this type are called 'small world networks'. They are characterised by stronger bonds between members.

A small world network of the type we're talking about is a cluster of nodes connected to a hub and that hub, in turn, is likely to be connected to other hubs and nodes. As we've learned, there are a number of these larger, more-connected hubs dominating the permaculture milieu and its online presence in Australia.

Information flows between these hubs and nodes via 'weak links', individuals who serve as conduits for the flow of information (as differentiated from the strong links—the connections within small world networks). These are what author, Malcolm Gladwell, calls 'connectors' in his book, *The Tipping Point*. Connectors are important to the flow of news and ideas between the hubs and nodes they are loosely connected to.

This is how I see permaculture in Australia being structured as a network of connected nodes with others being unassociated with any hub. The advantages of distributed networks such as this includes a resilient structure that allows hubs and nodes to come and go without degrading the overall structure and function of the network. That is, unless a sufficient number of the core hubs go down, sufficient to disrupt network cohesion by breaking the numerous connections to smaller hubs and nodes. The disadvantage of this distributed structure is the lack of cohesion, of a voice in the political decision making that determines what those distributed hubs and nodes can and cannot do.

The distributed network structure gives rise to the perception of permaculture practitioners that they participate in some kind of grassroots revolution and that the combined effect of these clusters or hubs acting where they are based will somehow create broad social change.

There is some truth in this because at some point all development becomes local, however hubs made up of permaculture practitioners practicing locally operate within a context of policies, regulations and laws created by the different levels of government that are themselves influenced by vested interests.

Consequently, what these local groups can and cannot do is determined by larger forces over which they have little influence. The 2015 legislation governing raw milk production and sale in Victoria, which destroyed the raw milk business for producers and denied the product to consumers, is an example of the powerlessness of an uncoordinated group to influence government decision making. An organisation emerged after the fact, but that is probably too late to change the law unless it can mount a determined advocacy campaign to do that. That would take time, effort and a budget.

The 2014 Tasmanian government decision about identifying eggs and making them traceable to source (Primary Produce (Egg) Safety Regulations 2013)—that could have disadvantaged home poultry keepers and their right to give away eggs, but that was modified so that it didn't do so following public pressure—demonstrates the value of having a coordinated advocacy capacity. To give the permaculture design system greater influence, participants at APC10 called for permaculture,

Permaculture Australia[8] in particular, to develop such an advocacy capacity.

Development happens locally but it's like a fair food systems advocate told me—local is good and benefits local people and their local area, however unless it is part of a larger regional or national advocacy or network then local stays local. In other words, no matter how good local initiatives might be they will benefit only their own area unless they are actively part of some larger network through which people can learn from them.

In the past, accusations of 'centralisation' have discouraged the development of an advocacy or national body that would speak for permaculture in general. Permaculture then was perceived as a decentralised practice and setting up a representative body would detract and potentially disempower those scattered, independent nodes. At the time, practitioners said that there could never be an organisation that speaks for all in permaculture, that permaculture was too diverse to be represented, that permaculturists were too 'anarchistic' in attitude to have someone speak on their behalf. I'm sure that remains a belief among many today. All of these fears could be heard at permaculture convergences in the 1990s and they blocked the development of a representative body.

The cost of this was that permaculture has been conspicuously missing in campaigns and in the public conversation.

Then, in 2010 at APC10, things changed. It was a surprise to some who had been in permaculture for some time that the convergence called for Permaculture Australia to develop an advocacy capacity. That was a big ask and it's my impression that most of those present at that APC had little idea of the volume of work necessary to set up an advocacy function. Consequently, little progress has been made over the years since although it remains an organisational aspiration. The management board of Permaculture Australia has found its collective hands full simply continuing the organisation's traditional roles of managing the Accredited Permaculture Training, managing the tax-deductible donations scheme, Permafund, and its communications and networking role.

8 A national membership organisation managing Accredited Permaculture Training and the Permafund tax-deductible charity. It replaced Permaculture International Ltd, which was originally set up to publish the now-defunct *Permaculture International Journal*.

What for permaculture now?

If we accept that we have now left the Holocene epoch for the Anthropocene, as earth systems scientists and those who follow global development say, then a flow of questions about permaculture arises:

- given that things have changed and are not like they were when permaculture was born, what is the future for the permaculture design system in the Anthropocene—what is its role to be?
- how need permaculture change in order to fill a fresh social role?
- can permaculture reclaim the innovators role it had in its early days?
- could it expand its focus beyond the garden and into the social—what permaculture calls its 'invisible systems'? (because it is the invisible systems that make the visible systems achievable)
- is permaculture stuck in the confines of its own comfort zone?
- what can it build from its present condition as a distributed network with limited resources?
- if permaculture chooses to change, what organisations can provide the needed leadership?
- and, how would it engage with political and social decision makers to create the conditions under which what it wants to create has a chance of developing and persisting?

Required: a readiness to question what we believe

Questioning what we believe, questioning things we take for granted or that have been passed on to us by our permaculture teachers or through the books, texts and websites of the design system is a healthy trait. This sort of constructive, skeptical questioning is how we get to reassess things and change them if necessary. Questioning is a means to the evolution of the permaculture design system.

Permaculture's sets of principles, for example, are beliefs that should be questioned. There's two main sets, one each set out by Bill Mollison and David Holmgren. On the whole, they provide good guidance to design of landuse and human systems—what we call 'hard' and 'soft' systems. But, in the circumstances of the Anthropocene, are they still useful?

Could it be that David's principle of 'small and slow solutions' is, as the Great Acceleration continues to

speed us into the uncertainties of the Anthropocene, just too small and too slow? Do we still have the time to move slowly in an age when everything is accelerating? Will small and slow solutions turn out to be too small and too slow?

Some in permaculture have said that if the design system is to gain the influence it needs, it then needs to scale-up its works. This is not to say that all permaculture projects need be big. That leads to failure if resources are too limited and project implementers exceed their capacity in terms of funds, time, materials and skills. What those proposing a scaling-up are suggesting is that permaculture practitioners seek opportunity to participate in larger scale projects that are properly funded.

Such projects do exist although they are not many. One I have been associated with is Randwick City Council's redevelopment of its community centre for energy and water efficiency and as an educational resource. That included the design and construction of the Permaculture Interpretive Garden, a hybrid city park and educational facility, and the construction of an outdoor classroom, made largely from recycled materials, for the school's program. You could count Brisbane's Northey Street City Farm and Melbourne's CERES, too, as scaled-up permaculture although CERES started just as permaculture was educating its first cohort of teachers and although it didn't then fly the permaculture banner. There are other initiatives of scale that demonstrate permaculture design principles in action, yet those proposing scaling-up say that they are too few to have had a measurable influence on civic institutions, government and the popular imagination.

So, we see that small and slow solutions is a design principle that is applicable in some situations but, as the Anthropocene accelerates, might need to be revved up.

Horticultual educator and seed saver, Emma Daniell, with a collection of seeds.

Seed saving remains an activity where the principle of 'small and slow solutions' remains relevant because educating people in the skill distributes seeds and scales-up the activity.

Permaculture's PMI

To build something new we start from where we are and with what we have. So far, we have looked at permaculture in Australia as a distributed network of nodes and hubs with varying degrees of connection. We have thought of it as stronger at the local than the regional or national level and as having little voice in the public affairs that are within its ambit. Now, let's explore the design system through its characteristics.

To do this we build a PMI matrix. PMI means Plus, Minus, Interesting, a division of permaculture's characteristics that could leave us with clues as to where we best apply our energies to make the design system more relevant to emerging conditions in the Anthropocene. A PMI is a starting point, a way of doing structured, focused thinking.

I've filled out my own PMI but I encourage you to get together with friends and colleagues to make your own to assess permaculture's situation in the world and in your region…

Permaculture's pluses

What are permaculture's pluses, those things that work or have worked, those things that are positive, useful and of value that are brought by the design system?

- permaculture has persisted for nearly 40 years, suggesting it has continuing utility, relevance and durability
- a civil society technology adopted at the community level
- a tactical approach
- a sturdy structure based on geographically distributed and independent units operating within the design system's set of ethics
- cohesiveness through sets of principles and ethics that produce common characteristics among permaculture projects
- a motivator of individuals and community-based organisations
- proven effectiveness as a technology for increasing the resilience of the household economy (food, energy, water, waste, cooperation, conviviality)
- a synthesis of ideas from other areas brought together into a cohesive system of design
- applicable in both rural and urban areas
- adoptable as a livelihood
- the existence of key texts—books
- existing websites and social media
- existing examples
- the existence of established and reputable educators.

Permaculture's minues

What are permaculture's minuses, those things that don't or haven't worked so well?

- a sometimes dogmatic attitude that people find offputting and arrogant (a declining incidence, fortunately)
- permaculture is more a tactical and less a strategic approach; it is based on smaller, local initiatives but—some permaculture individuals and some organisations excepted—generally does not participate in the educational and advocacy organisations that deal in policy and strategy (for example, permaculture as an identifiable entity plays only a minor role in the national fair food movement although some permaculture organisations and individuals are involved)
- permaculture projects are underfunded, limiting their potential especially when done in public places
- the finished quality of some permaculture work in public places can be poor
- permaculture practitioners lack a set of standards for their work and, consequently, quality assurance that their designs will work as described, effectively and safely
- permaculture has been and continues to be grant-reliant for larger projects
- permaculture has a garden focus but is often disconnected from the fair food movement and from those organisations representing urban agriculture
- focus on the household economy has led to reduced involvement in larger social, economic and environmental issues and projects
- too little focus on solutions for denser urban areas and highrise living (where people have no gardens)
- lack of a whole systems approach to urban development inclusive of food systems, building design, water and waste management and energy systems
- insufficient focus on permaculture's invisible systems (community economics, leadership development, decision making, entrepreneurship, advocacy, community development etc) that enable projects to be designed and implemented effectively and that are necessary for the success of permaculture projects
- lack of internal dialog (including use of online media where ideas about permaculture could be discussed) that is necessary for permaculture's development and for providing mutual assistance.

Permaculture's interesting points

What are those 'interesting' things that have potential for permaculture? Those 'what if' questions?

- permaculture has seen limited adoption as a livelihood; there may be potential if workplace needs can be met (eg. through Accredited Permaculture Training and the setting of standards covering design and work)
- develop links with local government regarding public place projects
- diversification of the Permaculture Design Course (retaining core elements and diversifying other content to broaden appeal and adoption by those with special interests).

Thinking through our PMI we might identify those things that permaculture is doing well and work out how to increase and reinforce them. Some of the items on our 'minus' list might be abandoned altogether while some might be remediated to return them to use. Those in the 'interesting' category hold potential for further development.

Now, we might brainstorm trends likely to persist and perhaps accelerate in the Anthropocene. These might include:

- population growth and urbanisation
- littoralisation—the growth of cities most of which are on the coastal plains
- climate change, with its unknowns
- the possibility for systems to simultaneously fail, challenging our capacity to recover (an idea explored by Thomas Homer-Dixon in his book, *The Upside of Down*)
- ocean acidification
- reduced availability of key resources for which we have as yet no synthetic or alternative replacements
- the further fractionalisation of working life and personal wealth into those with well-paid, full-time careers and those reliant on part-time or casual jobs
- the robotisation of middle class jobs in which software replaces people in the workplace, a process already underway and that could take perhaps a third of all jobs by 2025 (Patrick Thibodeau, computerworld.com; the Australian government's *Australian Industry Report 2013-14* by Department of Industry and Chief Economist Mark Cully that forecast that robots and automation could displace more than 500,000 jobs in high-skilled industries such as accounting and finance in the near future)
- the destructive potential of small religious, political and ethnic groups with a grudge
- continuing regional conflicts
- reliance on online media and its further penetration, leading to its indispensability in daily life (the Worldwide Web is already largely indispensable and email and messaging are used daily by private individuals and organisations as their sole means of communication, necessitating access to digital communications devices and broadband services)
- the ubiquity of digital communications devices, including their presently developing role in poverty alleviation and local economic stimulation (especially the mobile phone)
- new technologies that could open new opportunities
- the periodic appearance of disruptive technologies that destroy or fundamentally alter existing industries and practices and that create new ways of doing things and new opportunities
- the occurrence of 'black swans'—a term originated by Nassim Nicholas Taleb to describe events that come an a surprise and have a major impact
- the further development of regional food systems and their role in reinforcing regional economies
- the division, already happening, of farming and food markets into the big agribusiness, big farm, mass food, big supermarket chain model and the regenerative, intensive and at least partially organic farming model with its own market
- an increase in urban farming, both for the market as well as for the direct subsistence of the grower, or that is informally traded
- the sharing economy with its community-based, moneyless trading systems and peer-to-peer trading and sharing schemes that replace ownership with access for use.

Having made your own PMI and thought about these trends that are part of the Great Acceleration into the Anthropocene, we might think about where we could focus our own role in permaculture so as to increase its value to this new epoch and to establish a role for the design system as something useful in a future of rapid change and uncertainty.

These things—the distributed network, the PMI assessment—describe permaculture as it is now and are starting points from which to think about a refreshed role for the design system in the Anthropocene.

That role cannot be defined as yet because uncertainty is the defining characteristic of our Anthropocene future. It will take time to understand the changes the era is bringing and how permaculture could reconfigure to participate in it and develop solutions. And we might not know those changes until they are upon us. Thus, adaptability becomes a necessity.

Despite this, we have some idea, a broad outline, of some of the conditions we may have to deal with and now, rather than later, is the best time to think about whether permaculture, as it has been practiced, will meet the new challenges, or whether we need create a new version of the design system to make it fit for purpose.

How do we create a role for permaculture?

Knowing that we have now entered the Anthropocene era and knowing that it has been the Great Acceleration that has brought us here and that it is still running, brings us a renewed sense of urgency about how we might adapt to the emerging conditions.

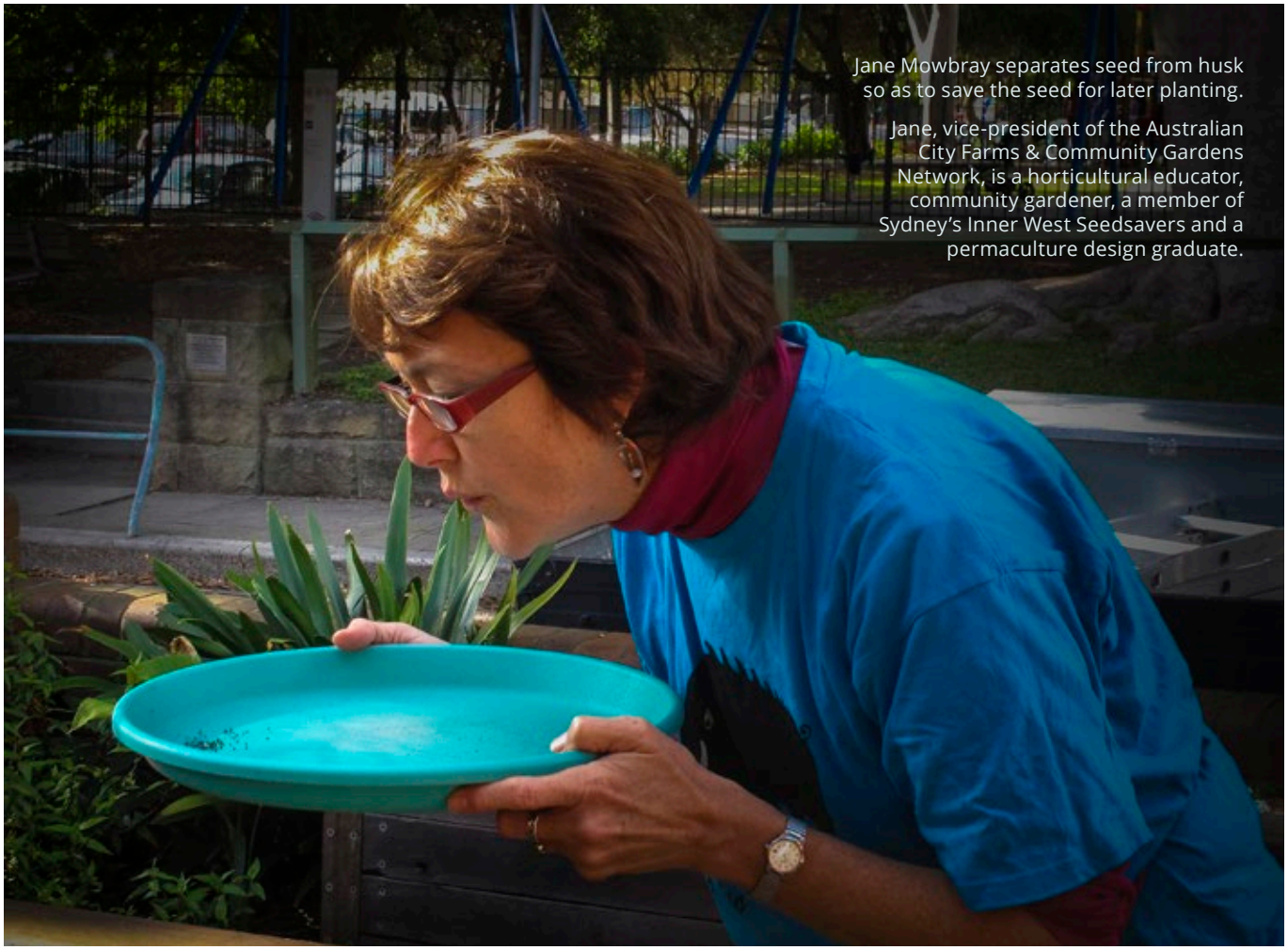
We cannot see the future of course, and we cannot assume that we can simply extrapolate the present and say 'hey, look—the future's just going to be an extension of present-day trends'. That ignores the unanticipated, the uncertainties such as economic fluctuation, new technologies that change the way we do things and those black swans mentioned earlier, those rare events beyond our normal expectations.

In the face of government, institutional and business dithering, their sheer lack of experience and ability to deal effectively with emerging trends, can civil society take a leadership role in creating meaningful responses?

Civil society is hamstrung by a lack of regulatory power and influence, a lack of funding and the time and skills constraints on citizens, yet it has brought change in the past and I'm reminded again of Margaret Mead, the anthropologist, who pointed out that it is often small groups of people that create change.

If permaculture practitioners are to play a role in any civil society response leading to adaptability and resilience in the Anthropocene, then that requires a capacity to build a cohesive social movement with a capacity for advocacy. Permaculture already is a social movement but it is geographically distributed and exists as small nodes of practitioners few of which are collaborating on projects of national importance and influence. Its work on small, local projects is important and, collectively, those small projects do generate a level of influence. But they need be supplemented by larger scale efforts that demonstrate that in those small projects lie clues and solutions to how our societies could adapt to Anthropocene conditions.

We're talking about grassroots change here and how to multiply that. Doing that calls for the permaculture design system to develop some expertise in building cohesive social movements, something that has traditionally lain outside permaculture's ambit. Now, it need to be brought inside.



Jane Mowbray separates seed from husk so as to save the seed for later planting.

Jane, vice-president of the Australian City Farms & Community Gardens Network, is a horticultural educator, community gardener, a member of Sydney's Inner West Seedsavers and a permaculture design graduate.

A starting point

In a separate paper, Towards Permaculture 3.0, some years ago I outlined ideas about the structure and content of the permaculture design system that I believe could prepare it for a revived role. They are a modest starting point and would have to be modified and built upon.

However the design system is eventually revised, there is much in it that we may wish to retain. To improve it we need to analyse it and assess what new ideas would, to borrow an idea from evolutionary biology, bring it even better fitness-for-purpose.

What permaculture does well

To ensure that our design system really is fit for purpose, that it can find a role in the Anthropocene however modest, perhaps a place to start is improving those things that permaculture already does well. Doing that is part of the SOAR process used in organisational troubleshooting and direction-setting (SOAR—Strengths, Opportunities, Aspirations, Results).

This is not to suggest that we fail to pay attention to the problems we might identify were we to make a SWOT analysis (SWOT—Strengths, Weaknesses, Opportunities, Threats). What SOAR does is bring attention to improving what we already do well.

So, what is it that permaculture does well? A few things that come to mind are:

- **educating**—through its courses and workshops, its books, websites and social media, permaculture educates people not only in its ethics, principles and characteristics but also in ways that they can make improvements to their own lives and that of the communities they live in, or those distributed communities of interest they participate in
- **motivating**—permaculture motivates people to take action where they are, based on their interests and the skills, knowledge and the materials at hand; this might be working on permaculture's visible systems such as making some physical object like a small food garden or improvements to a house so that it uses less water and energy and reduces the financial costs of those things; it might be doing something in permaculture's intellectual garden—its invisible systems—such as setting up a new organisation, lobbying local government, creating a cashless community trading system or working with a food sovereignty organisation
- **reframing**—it is often the result of a permaculture design course or of reading permaculture literature that participants start to think about and restate things in different ways that create new meanings, and ask different questions of them; reframing implies rethinking and this can lead to a new outlook and worldview, to seeing problems as offering solutions (such as seeing waste as a resource or the decline of an organisation as the opportunity to rethink, restart and create something better)
- **collaborating**—this is necessary to build something in a community or with friends and colleagues; it is cooperation, the sharing of knowledge, information, skills, tool and technologies; to collaborate is to work together either on something of mutual value or to assist someone gain something of personal value; it is a way of enacting permaculture's Third Ethic of sharing of resources and 'fairshare'.

The PMI—the Plus, Minus, Interesting matrix we looked at earlier—is another source of clues as to where we might act. We need look at our own needs and circumstances and those of our geographic or distributed communities to set priorities from those things we identified and to then draw up plans and devise tactics to address them.

> **...To change something, build a new model that makes the existing model obsolete...**
> **Buckminster Fuller**

The task ahead of us is to multiply and distribute these things that permaculture is doing well. How do we do that? Here's a few principles:

- **work where it counts** (a Mollisonian principle); what are our priorities in the Anthropocene and how do we make our modest contribution to addressing them?
- **work with people who want to learn** (another Mollisonianism)
- **start small, consolidate** (complete) the area or idea we are working on, then proceed in small modules of development from the edge of the module we have consolidated; consolidation of modules leads to less time spent in maintenance and patching-up;

depending on what we are working on, this can be a path to scaling-up while keeping the project manageable

- **resist mission creep**; focus on one or a small number of achievable goals and avoid adding more; doing that is a path to overambition, to participant burn-out and to exceeding our resources (time, skills, knowledge, funds etc) and capacities; mission creep is a path to mission failure
- **avoid grandiose strategic plans**; overambitious strategic plans might not be achievable and attempting to realise them can lead to personal and organisational burn-out; stay within the limitations of your resources; strategic planning is often over-done; sure, you need to know what you want to do but the future is unforeseeable and circumstances change; what you need is a vector (a direction or path) rather than a detailed, step-by-step strategic plan; you need to know where you want to get to but you need planning that leaves the 'how' of getting there open so as to be adaptable to change; strategies are enacted through action plans or tactics and you need to leave open the option of selecting the right tactics at the right time.

The movement

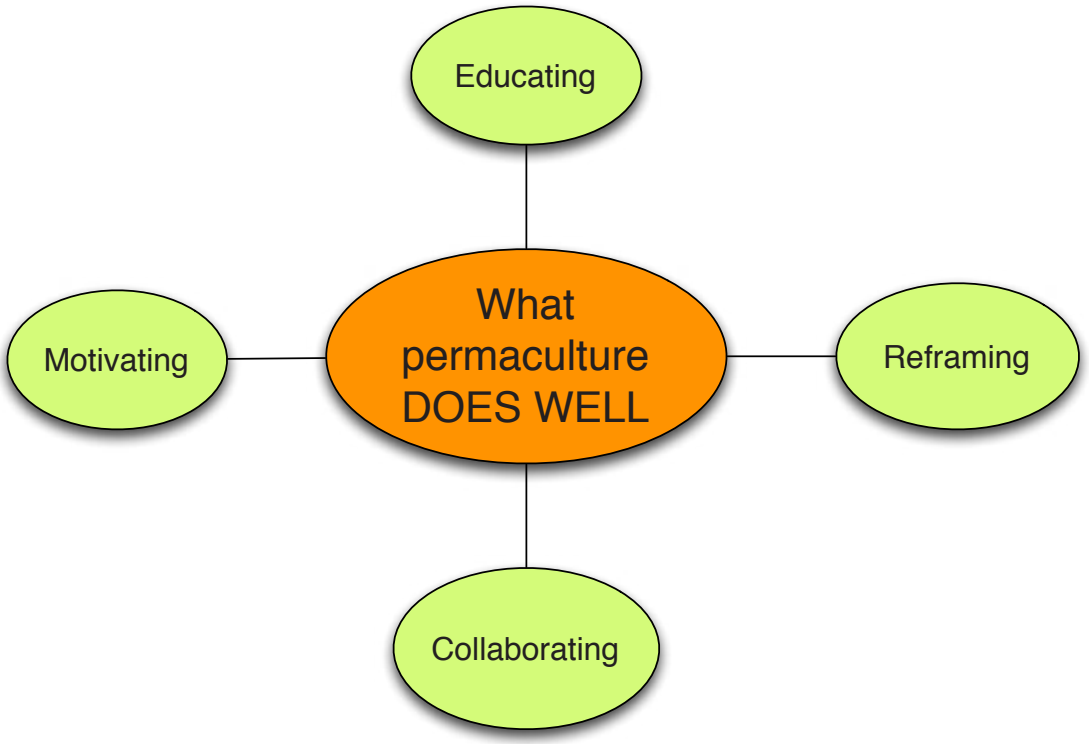
People sometimes ask whether permaculture really is a social movement. If it is not, then it is little more than individuals and groups doing things that will never amount to more than themselves.

I think permaculture really is a social movement because it is practiced by a substantial number of people, it is focused on creating sustainable and resilient ways of living and consists of a set of ideas and practices that move towards that goal.

It is also an open system in the sense that it takes in useful ideas from outside of itself and that it is available for all who want to adopt it. Permaculture is an open-source technology—you are free to use, adapt and tinker with its code (its principles, practices and charactristics). This is why the Third Ethic, which is about sharing, implies an open source structure.

> **...It's risky doing anything. But riskiest of all is doing nothing...**
> **Cory Doctorow**

But if we want to see permaculture grow and diversity and play a role in civil society—and, hopefully, institutions and local government adopt it—then we need to figure out how we can grow it as a social movement. That's no small task and clearly it won't be for all in permaculture. So I propose that we replace the difficult idea of getting consensus on the things we need to do, with consent. That means you don't have to agree, or you might have reservations, but you consent to letting those building the movement get on with it.



You have the freedom not to participate, to help out a bit, to jump in enthusiastically but not to be a saboteur or a troll. That is consent.

I don't see an organisation within permaculture at the present time that has the capacity to take the lead on advocacy or on building on permaculture's existing roles as a social movement. Were one to emerge I would suggest it take the path to developing social movements described in the book, The Dragonfly Effect[9]. It's a book ostensibly about using social media to drive social change but it contains much of value beyond the use of social media. Here's its four steps of social movement creation:

- **focus**—adopt a single, concrete, measurable goal
- **grab attention**—make people pay attention to your idea
- **engage**—form personal connections to encourage the word-of-mouth ripple effect of information transfer
- **take action**—empower people to take diversified and independent action to achieve your focus.

Doing this is a big task. The time might not be now. But the time might be coming. It might be coming because the Great Acceleration is propelling us into the Anthropocene and there, things are going to be different. They already are. We need to gather up what is useful from our collective permaculture experiences of the past and mash that up with new ideas and those good ideas yet to come and create something good.

As Science fiction author, Cory Doctorow said: "It's risky doing anything. But riskiest of all is doing nothing".

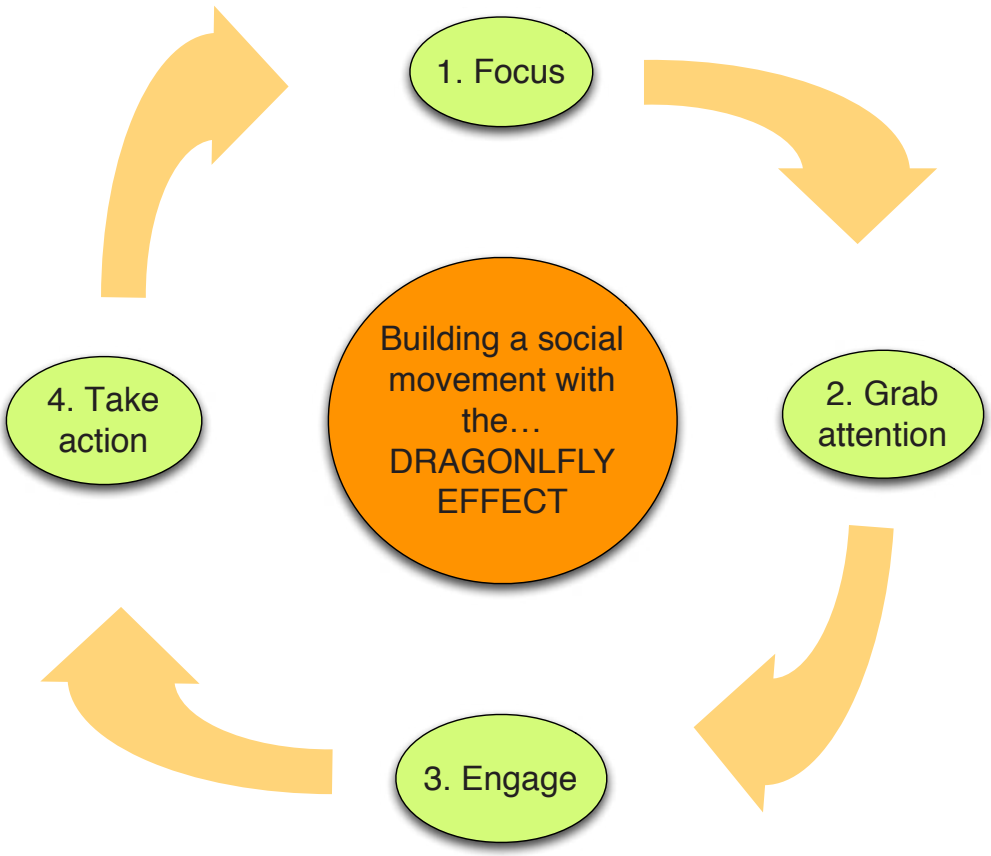
In this Anthropocene future, a future already present, permaculture has the potential to play a constructive role. It is up to us and to those coming into the permaculture milieu to make it so. Let's make a start.

Associated publication:

Towards Permaculture 3.0
http://pacific-edge.info/wp-content/uploads/2009/07/Towards-Permaculture-3.0-web.pdf

Permaculture— A manifesto for a culture of permanence
http://pacific-edge.info/wp-content/uploads/2009/07/Permaculture-manifesto-apr13-v1.pdf

9 The Dragonfly Effect; AAker J, Smith A, 2010; Jossey Bass, San Francisco.



home...

NASA Earth Observatory image by Robert Simmon, using Suomi NPP VIIRS data provided courtesy of Chris Elvidge (NOAA National Geophysical Data Center). Suomi NPP is the result of a partnership between NASA, NOAA, and the Department of Defense. Caption by Mike Carlowicz.

Creative Commons Attribution-Noncommercial-
No Derivative Works 2.5
Australia License. http://creativecommons.org

Non-government educational, advocacy, local government, sustainability educators and community organisations may reproduce and distribute this brochure under this same Creative Commons licence.

This Creative Commons notice must appear on the document. Please inform us if you reuse the brochure: russgrayson@gmail.com

Russ Grayson, Sydney, March 2015