

# Nature & Society

The Journal of the Nature and Society Forum

August-September 2012

## Editorial

Oikos, the ancient Greek word for home, is the root of both our words economy and ecology. Indeed in my Shorter OED the early usage of economist referred to the household manager. Ecology now recognises that the environment around us is also our home, and we need to study it and treat it well so it can sustain us.

Over time words and actions have a tendency to drift away from their originals: they can separate widely. Economists in general consider that their job is to deal with money and wealth creation and ignore the environment. And ecologists think the economists are completely wrong.

Thus we have an economist, Professor Jeff Bennett, writing a book, *Little Green Lies: An expose of twelve environmental myths*. It would be possible to write an essay (or a book) refuting each of his twelve 'myths', although I admit there is some truth in most of them. In particular Greens really do need to recognise that there is a down side to almost every alternative energy

source, and such sources should not be relied upon to replace all the fossil fuelled energy we currently consume. As well as alternative energy, we must reduce demand and improve efficiency but not, as Bennett would have us, continue using coal.

But I want to concentrate here on just one of Bennett's 'lies'. He maintains that Greens are wrong to think that we need to halt population growth. In Bennett's view, people are a resource because they are innovative and can find new ways to solve problems. Granted that is true, as far as it goes. People are innovative – but their innovations are not necessarily good. While many innovators actually do find good answers to problems, many more innovations, whether intentionally or not, are designed to

make us waste more resources. Furthermore from primitive tribes to modern civilisations we have been good at devising maladaptations that have the effect of making some section or other of society miserable. Innovation as a panacea may be one of the economists' own little lies.

Our cleverness manifests itself in small and large ways. Advertising makes people want more than they need. Gambling, drunkenness and other traditional vices make people poor, unhappy and suicidal. Bad food choices lead to chronic health problems.

Nuclear weapons could exterminate our species. Yet each of these facets of civilisation is a manifestation of our ability to innovate, from manufactured food to gambling machines and weapons of mass destruction.

Even our best innovations tend to have a down side. Medical innovations such as antibiotics must be counted as an undoubted good. Yet their use has led to big problems, for both people and the environment. Antibiotic resistance would have undoubtedly developed,

however we used them, but the decision to use them en masse to fatten up livestock has speeded up the evolution of such resistance.

*Humanity did not descend as angelic beings into this world. Nor are we aliens who colonized Earth. We evolved here, one among many species, across millions of years, and exist as one organic miracle linked to others. The natural environment we treat with such unnecessary ignorance and recklessness was our cradle and nursery, our school, and remains our one and only home. To its special conditions we are intimately adapted in every one of the bodily fibres and biochemical transactions that gives us life.*

E.O. Wilson

The Future of Life, 2002

## Contents

NSF news	3-5
Coming events	3, 5
June meeting:	
- Conjuring a parachute	4-5
People in the Sahel	6
Book review: Waking the Giant	7-9
Planet under pressure	9-10
Farrago	10-11

Now that so much of the human population is on medication for nearly anything you can name, and lots you can't name, the presence of so many pharmaceuticals in waste water is causing damage to the rest of the living world, and endangering other species and probably damaging us.

Reproductive technology, while bringing joy to many otherwise childless people, is also not an unadulterated good. The processes of evolution have always relied on letting only the fittest or the luckiest of the species produce surviving young. We tend to follow that maxim with our domesticated animals, but not with ourselves.

So yes, humans are innovative and clever, but their solutions do not necessarily work towards the best environmental outcomes, and not even to the best outcomes for ourselves. And we show very little sign of recognising that we need to live within the Earth's carrying capacity.

By any measure humans are now a plague species. It seems rough to compare us with a plague of rats or mice or locusts, but indeed we are far worse. Nature has always provided an answer to plagues. When a food source becomes abundant, a species that eats it can proliferate to plague proportions. When the food source runs out, they starve. Alternatively a predator species may in turn feast on the abundant prey. One way or another, the plague is cut short by natural processes. But we are too cunning to let that happen to us – at least for the time being.

Ecology would teach us that we are just one species amongst many others. If we want to stay in harmony with the natural systems, and we do not want to die from starvation, drought or predation, then a wise course would be to control our own numbers by humane means, such as birth control. We need to move away from the pro natalist stance of previous generations. We should honour those who choose to have few or no children.

If we think we are too clever to fall prey to predators we need to think again. We ourselves have a whole ecosystem in our own guts – and it is essential for our own health. But it can turn

against us. We are reliant on the forests, land plants, and especially the ocean ecosystems, in particular on the blue green algae, to provide us with oxygen, and similarly to purify water.

In the recent television series on Growing a Planet, the point was made very powerfully that plants actually created the world we have known. Certainly there were bacteria before plants, but plants were and are essential for life as we know it. Without them, there would be no animals. That point needs to be made again and again.

In the *ANU Reporter*, for winter 2012, Bennett wrote "One reason for questioning them [i.e. green views] is that they represent the views of a particular group in our society. By implementing policies based on the demands of

this special interest group, the rest of society may be made worse off." The truth is that caring for the environment is the most important and all-encompassing issue we need to face. It would be more correct to describe economics as a special (limited) interest.

Life on Earth existed well before Economics was invented. It will continue to exist. The question that is of concern to us is whether

humans will continue to exist. We as a species have been profligate, wasteful beyond imagination. Any housekeeper who ran her establishment the way we have run this planet should be rightfully censured, demoted or sacked.

**Jenny Wanless**

*Man had always assumed that he was more intelligent than dolphins because he had achieved so much – the wheel, New York, wars and so on – whilst all the dolphins had done was muck about in the water having a good time. But conversely, the dolphins had always believed that they were far more intelligent than man – for precisely the same reasons.*

*Douglas Adams*

---

### How phenomena become data

I do hope Crikey and its readership are absolutely clear about "data". Data does not speak, it must be interpreted, and the interpreter must unequivocally serve the truth. Crikey and its readership may be less aware of how rare such a pure intent is in the scientific community. This is because the data must be generated from a phenomenon, a raw, rough and unscientific reality, and without this clearly if not passionately held in view, there is nothing to be true to.

Gavin Greenoak, Crikey.com.au, 13 June 2012

---

# Nature and Society

Editor: Jenny Wanless

Publisher: Nature and Society Forum

ISSN: 1038-5665

**Nature and Society**© is the journal of the Nature and Society Forum, GPO Box 11, Canberra ACT 2601, and is published six times a year.

Tel: +61 (2) 6125 2526

E-mail: [office@natsoc.org.au](mailto:office@natsoc.org.au)

Websites: [www.natsoc.org.au](http://www.natsoc.org.au)

[www.biosensitvefutures.org](http://www.biosensitvefutures.org)

## Where we are

The Forestry Building of the Fenner School of Environment and Society at the ANU.

From the building's entrance, turn left past the School's office and our office can be found on the right at the end of that corridor. But ring before coming as the office is occupied irregularly.

**By car:** There is very limited meter parking 200 metres to the north, near Union Court.

**By bus:** The route 3 bus from Civic drops you in Daley Road. Walk 100m south-east to the Forestry Building.

**By bicycle:** Abundant bicycle parking just outside our office.

---

**Friday 21 September, The End of Growth, Richard Heinberg, 7 pm, Manning Clark Theatre 2, ANU**

Continuous growth of either population or GDP is impossible in a finite world. Both these drivers of unsustainability have now run up against nature's biophysical limits. Nature is now forcing humanity to a transition, one that is as profound as the transition from gatherer/hunter to settled agriculturalist which began 10,000 years ago. Richard Heinberg explains the close link between, on the one hand, resources and the environment and on the other the social and economic components of the present global turmoil. While the conventional wisdom is that we must get 'the economy' growing again, Heinberg shows that not only is this the wrong strategy, it is actually making the situation worse.

More on page 5

## Coming NSF meetings

**Wednesday 15 August: *An Economy for a Resilient World*. Robert Howell, 7:30-9:00 pm** at the ANU's Frank Fenner Building, corner of Daley Road and Linneaus Way.

Robert Howell will describe how modern philosophers have extended their traditions to deal with Human – Earth Relations, how many scientists have provided insights into how an economy should work, but mainstream economists and financiers have yet to make the necessary changes to invest in a world that cares for the planet and its people.

Robert is a Quaker peace and Earthcare worker.

---

**Wednesday 19 September: A perspective from the younger generation, Johannes Brossman, 7:30-9:00 pm** at the ANU's Frank Fenner Building, corner of Daley Road and Linneaus Way.

Johannes is studying for a Bachelor of Education in Environmental Pedagogy at a tertiary institute in Vienna. During this 3-year course students study various aspects of sustainable development, resource management, humans and the environment, and environment and sustainability education.

A part of the course requirements is that the students spend some time in a study centre with related aims; and Johannes has chosen the Pullenvale Environmental Education Centre (PEEC)\* in Brisbane, because he likes what they seem to be doing, and because he wanted to come to Australia!

The PEEC is affiliated with the Queensland Department of Education.

From their website, it would appear that PEEC's teaching is in line with NSF's ideas of Biosensitivity.

This will be a special opportunity to gain an international perspective from a concerned young adult – an adult from a generation that will have to deal with the mess that older generations have created.

---

\* <http://education.qld.gov.au/schools/environment/outdoor/pullenvale.html>

---

Forests greet us and deserts dog our heels

Derrick Jensen

## NSF meeting reports

### Conjuring a parachute

#### Colin Butler's discussion meeting on 20 June, 2012

Colin Butler offered to give this talk in response to Nicole Foss's rather bleak talk in February. Although many of us have very little hope that humankind will be able to pull ourselves out of the mess we have got ourselves into, many of us were still shocked by her conclusions. Colin was obviously one of those.

However, his talk showed he was no starry-eyed optimist. He began by pointing out that it is nonsense to suggest, as some economists do, that demand will create a parachute. He worked his way through the many challenges we need to acknowledge. They run the gamut from depletion of so many resources: we are now at peak oil, peak phosphorous, peak soil and more. Populations are growing in leaps, when they need to be declining; there may be more people living in health and comfort than ever before, but there are also more people living in absolute poverty, starving or malnourished, and in hopeless situations. We are borrowing from the future to pay for our current life styles. Actual physical measures of Earth's systems show that many are suffering from climate change and other stresses. We are approaching tipping points that will see the situation worsen dramatically.

I was pleased that Colin dismissed the argument used by unrealistic optimists, such as Julian Simon and Bjorn Lomborg, that because humans are so resourceful and innovative, they are the ultimate resource, so increasing numbers do not matter. This is frankly nonsense. There were geniuses when the population was less than a tenth of what it is now. There were oodles of innovative solutions. Then and now these innovations solved current problems, but often stored up problems for future generations, such as the desertification caused by the ancient irrigation systems in Mesopotamia.

Colin recognises that civilisation is at risk on many fronts. There is emerging scarcity in many areas, notably in energy and raw materials. The economic system is archaic. Inequality is increasing, and the results of that inequality are obvious in civil stress, terrorism, fascism and war. The present fuss over refugees coming to Australia is a tiny foretaste of what will happen in the near future, as the very real problems we face start to bite in earnest.

Colin also recognises that any movement to remedy this difficult situation is up against formidable problems. There are cognitive and physical barriers to solutions. One of the cognitive barriers is the optimism bias; many people just assume that everything will work out. Wishful thinking about technology raises expectations that solutions will appear. Worse there is an increasing resistance to science, with people learning from 'trustworthy'

sources, whose non-scientific ideologies are grounded in 'commonsense'. Although scientific knowledge may suppress earlier intuitions, in many people it does not supplant it. There is a mismatch between their brains and the environment.

So given that Colin is a realist when it comes to the problems we face, what hope does he give us? Certainly nothing immediate. He says we need a new economic system. We are suffering from what he called the *Matthew Effect* (*he who has, gets*), increasing inequality. So we need a new social contract, for example to make the burning of coal as unacceptable as smoking in hospital. We also need new technologies.

The elements of a parachute will be created from a new social contract and technology. There will have to be multiple pathways, with cooperation and tolerance to the fore, and new institutions. Like Martin Luther King, we have to have a new dream for the future.

There are some signs of this happening. China already has some Very Fast Trains in service. There is a planned network of very fast rail for the USA. This year the ACT Legislative Assembly has its first electric car (they date from the early

***Since you seem to think you have all the answers, exactly what should we do?***

*This is the most disingenuous question of all. You know exactly what needs to be done. If you walked into a room and saw a man attacking someone you loved, would you ask an obscure writer like me what you should do? Would you write a letter to congress, sign a petition, hold a candlelight vigil, vote for a Democrat...or would you beat the attacker's ass from one end of the room to the other?*

*And for the record, I definitely do not think I have all the answers...but I sometimes feel I have more questions than most.*

*MickeyZ, 27 January 2011  
on the CounterCurrents website*

1900s). More than half the fish eaten by humans each year now come from farmed fish.

Colin's dream is that the world will be transformed by humans developing planetary thinking, and sharing – what is called the Noosphere. But Colin also quoted Prof Elinor Ostrom (1933-2012) saying 'We have a decade to act before the economic cost of current viable solutions becomes too high. Without action, we risk catastrophic and perhaps irreversible changes to our life-support system.'

It is that tight time line then, that differentiates the optimists from the pessimists. Maybe the optimists are wishful thinkers and the pessimists are just realists. Sorry Colin, for my own part I hope your wishes come true, but I wouldn't bet on it.

*Jenny Wanless*

## Ideology and science

Why is it that when well-trained, experienced and generally pretty independent-minded scientists, using the well-substantiated scientific method, explain and predict for us the most probable results of performing an action on animate or inanimate objects, most of us tend not to kick and whine or otherwise hold our breaths 'til our faces turn blue... when it's about classical or quantum mechanics, astronomy or even (gulp) biology?

But when the same kinds of scientists, indeed, in some cases, precisely the same scientists, using the same methodology and care, explain and predict for us the most probable outcome of ignoring accelerating emissions of CO<sub>2</sub> and methane and the misuse of finite resources, a sizable fraction of us immediately acquire a transcendent, and apparently impenetrable, certainty that their hood is being winked, their bam has been boozled and that someone thinks they just fell off the turnip cart. In short, that no so-called scientists groping for grant money can pull the wool over their infallible eyes.

Posted to the website of *Scientific American* on 24 May 2012 in response to an article about Jorgen Randers' new book 2052: A global forecast for the next forty years published earlier that month.

From page 3

## More about Richard Heinberg's Australian tour

Richard Heinberg, an internationally known author, educator and speaker, is touring Australia in September. NSF is delighted to be co-hosting Richard's talk in Canberra on Friday, 21 September.

For our interstate members, his other talks will be as follows:

Brisbane: Saturday September 15

Sydney: Tuesday September 18

Melbourne: Saturday September 22

Adelaide: Tuesday September 25

Perth: Thursday September 27

*It is high time that we stopped calling for an "End to Growth". Stopping growth is meaningless. Or promoting "degrowth" or a scaled down form of industrialism. Degrowth and de-industrialism is inevitable. I don't know of a weather forecaster that advocates or promotes a coming storm. It's coming - and in fact has begun whether we like it or not or choose to ignore the signs.*

*Tim Murray, commenting on Chris Clugston's Scarcity: Humanity's Final Chapter, 2012*

Richard is a Senior Fellow of the Post Carbon Institute and is widely regarded as one of the world's foremost peak oil educators. Richard's latest book *The End of Growth* follows nine others that deal with declining resources, particularly oil. His books have been translated into eight languages.

Richard is a recipient of the M. King Hubbert Award for Excellence in Energy Education (2006). He has appeared in a number of documentaries, the most recent being *Earth 2100*

ABC (US) 2009.

## Richard Heinberg's appearance in Canberra is co-sponsored by Nature and Society Forum

### How do you prefer to read *Nature and Society*?

Dear members, with the reinvigoration of the Forum's website, this journal, *Nature and Society*, will become available on line, both directly to you by e-mail and also for reading on the NSF website. We would like to know what members feel about receiving an electronic version in contrast to the present printed version sent in the post.

Please write to the office or send an e-mail to [office@natsoc.org.au](mailto:office@natsoc.org.au) with your preference and your comments.

Jenny Wanless, editor

## People in the Sahel

- Imagine stretches of flat sandy country as far as the eye can see.
- Imagine a burning sun, perhaps a few Baobab trees that have stored water from the rainy season, so that their canopies still are green.
- Imagine people living where the temperature never goes below 20 degrees Celsius.

In Burkina Faso (=“the land of the upright people”), one of the smallest African republics, there are 16 million people, more than double the population of NSW on a third of the area of NSW. Visiting other countries and seeing how people live gives you a perspective on the diversity of the world, the more different the countries are the more they open your eyes.

Coming from the Global Greens conference in Dakar, Senegal where delegates from 92 countries tried to address the environmental and economic problems of the world, I had also got distressing information about the inequality and corruption in many of the African countries. It was then a rewarding contrast to meet the people of the villages in the sandy semi-desert of Burkina Faso. People are living on less than \$2 a day and yet they were singing and dancing, receiving me generously as an honoured guest. It became more obvious than ever to me that the quality of life is not a matter of money and that happiness is based on more important values than dollars.

People in Burkina Faso appeared healthy, obesity is certainly absent and the children appeared well looked after. I was a guest of our aid organisation, Plan, which is funding health measures like clean water, sanitation and the vaccinations of babies. There is now a well founded belief that these children will survive until adulthood, so the need for having many children to assure the survival of the family is no longer a consideration. This is a natural way of population control, extremely important in a country which is already overpopulated and which has had a high population growth rate.

It was great to make personal friends with my sponsored child Kouka, who proudly wore her “Obama Girl” T-shirt, a reflection on the fact that an African American had attained one of the highest offices in the world. I came away with many bright memories and some treasured gifts from the villages



such as a locally woven coat and a stick to be used to till the soil. The living chook with beautiful eyes was a present that I as a vegetarian preferred to pass on to one of my local friends.

*Gösta Lyngå*

---

## A plague of economists

Economists have become a plague as dangerous as rabbits, prickly pear or cane toads. Economists have become the cultural cane toads of Canberra, oozing over the landscape and endangering myriad indigenous species. Not only the economy but also mental health would be greatly improved if we could lift the fog of obfuscation on things economic. The first step is to take economists from their pedestal and to see them as the curiosities they are. The first step to reducing their power is to reduce their legitimacy. How is this to be achieved? First, economists' outpourings should, as a matter of principle, be met with laughter, derision, benign paternalism. They should cease to be employed as media commentators. In the long term they should cease to be hired. Let them be pensioned off and die out. Extinction is a worthy end for a profession whose brief is rotten to the core.

Dr. Evan Jones, Economics Department,  
University of Sydney, 1991

---

## Free will

Free will: to make decisions unconstrained by biology, physics, cultural and social conditioning and pressures.

Alexander Carpenter  
posted on the internet, 9 June 2012

---

## BOOK REVIEW

# Waking the Giant

by Bill McGuire

Oxford University Press, New York, 2012, 303pp

After the devastating 2004 tsunami struck Thailand, Indonesia and Sri Lanka, the internet was awash with suggestions that it had been caused by climate change. This was duly dismissed at the time by the author of this fascinating book, Bill McGuire. But it did make him think about the geological consequences of climate change. Would it have an effect on volcanoes and earthquakes, and seismic activity in general?

Bill McGuire is probably the best person in the world to address this issue, being Professor of Geophysical and Climate Hazards at University College, London. He is an author and broadcaster and his 2002 book *A guide to the end of the world: everything you never wanted to know* left an indelible impression on me. I'm still expecting the flank of the Cumbre Vieja volcano on La Palma in the Canary Islands to collapse into the Atlantic and cause a megatsunami any time.

There was a lot of seismic activity as the world warmed following the last Ice Age. Continents weighed down by literally kilometres of ice 'bounced back' as the ice melted. (It's called 'isostatic rebound'.) Only recently, however, scientists have wondered whether warming caused by anthropogenic climate change might also evoke a response from the Earth along the same lines. After all, we're already seeing significant melting of the world's glaciers as well as the ice sheets of West Antarctica and Greenland.

'[I]f we ...lose the Greenland and West Antarctic ice sheets and sea-levels surge far higher as a result, will this be enough to elicit a reaction from the geosphere sufficiently large as to be distinguishable from everyday geological activity?' Mc Guire asks. "My guess, for what it's worth, is that it will." In other words, we will 'awaken the giant beneath us' that, for much of the past 8000 years, has been slumbering.

Given the rate at which sea-levels are rising and ice-sheets are dissolving, which approximate with the post-glacial warming period of 12,000-8,000 years ago, the expectation of a reaction from the

planet's crust is not only plausible, but likely, according to McGuire. The areas that will be most affected will be the margins of the oceans, glaciated regions at the poles and high altitudes, and elevated topography.

Take Alaska, for instance, which may represent the first extended response of the geosphere to global warming. Alaska has both active and non-active volcanoes and the combination of high terrain and a tectonically active environment means landslides and avalanches are common. Significantly, they are happening more frequently of late. The September 2005 collapse of the Mt Stellar volcano which travelled at 100 metres a second before coming to rest nine kilometres away on the Bering Glacier, was so violent it was recorded on seismometers around the world. While volcanic heat can melt the base of a glacier, causing an avalanche, it is thought that

the part-culprit, at least, for the Mt Stellar avalanche was increased temperatures at the summit (0.3-0.4°C a decade) and a heat wave during the summers of 2004 and 2005. These combined factors melted sufficient glacier ice and thawed enough mountain permafrost to trigger failure.

It's not just Alaska, however.

Take the European Alps where over a million cubic metres of ice and rock were lost from the face of Monte Rosa in 2005 and similar amounts or more from each of four other peaks in the past decade. Canada and New Zealand have also experienced large landslides. Indeed, many of the major rock and ice avalanches of recent times have been preceded by heat waves. Unfortunately, periods of extreme temperature are forecast to rise twice as quickly as average temperatures and to last longer, making heat waves more common.

People in mountain regions, already subject to landslides, are now vulnerable to another threat as well: the natural dams caused by collapsed debris that can hold massive amounts of melt water. Usoi Dam in Tajikstan, for instance, created by a landslide 100 years ago, holds back Lake Sarez. Should a large mass of rock fall into the lake, say from an earthquake, the consequent tsunami would overtop the dam threatening five million people downstream. An earthquake might also dislodge the dam itself with the same result.

*There can be no "sustainable" use of NNRs. That is why they call them "non-renewable". They cannot be replenished in a time scale that is relevant to humanity.*

*Tim Murray, commenting on  
Chris Clugston's  
Scarcity: Humanity's Final Chapter?  
2012*

As the world warms and mountain glaciers shrink and ever more melt water lakes appear in mountain regions, the likelihood and the destructive potential of outburst floods increase.

It is not just temperature increase, however, that we need to worry about. The world is going to get wetter as well. More intense rainfall events will destabilise unconsolidated surfaces such as those exposed by melting glaciers, ash-covered volcanic slopes and steep terrain de-forested by logging. This will increase debris-flows and landslides. In 1998, for instance, as a consequence of the torrential downpours delivered by Hurricane Mitch, part of Nicaragua's Casita volcano collapsed causing mudslides that killed 2000 people.

All this is understandable, plausible, logical. The harder question is, however, will we see an increase in volcanic outbursts and

earthquake shocks as a result of anthropogenic climate change? McGuire says it largely depends on what we do. If we can slash greenhouse emissions and stop the wholesale melting of the ice-sheets with the consequent rise in sea-levels, we may allow the giant beneath our feet, who is currently stirring, to return to his slumbers. The problem, he emphasises, is that we have so little time to act. What we are doing now to save the Greenland ice-sheet (adopting renewables etc) is not enough. In 30 years time it may reach a tipping point from which there is no turning back.

Iceland, at the end of the last ice age, displayed spectacular volcanic activity (production of magma shot up 30-fold) as its massive ice-sheet melted. The Vatnajökull ice-cap is all that remains but is still impressive and in places a kilometre thick. Between 1890 and 2003, however, it lost a tenth of its mass and is losing half a metre of thickness a year. In consequence, the rock beneath – the lithosphere – is bouncing back. As pressure on the asthenosphere (beneath the lithosphere) diminishes as the ice cap melts, enough magma will be produced to provide a decent volcanic eruption every 30 years or so.

The removal of the icy cap of a volcano may cause it to erupt, but receding ice may also make it more vulnerable to lateral collapse. A violent eruption may be triggered as volcanic heat further dislodges

melting and degraded ice weakened by higher air temperatures. But it is not just in high altitudes or latitudes of snow and ice that these events occur. Volcanoes have a propensity for falling apart when the Earth is warm and wet. Saturation can pump up pore water pressure and raise the potential for sliding along existing planes of weakness.

Sea-level rise may have a role to play too. The bending of the Earth's crust in coastal areas that host volcanoes, can ease the ascent and extrusion of magma as demonstrated by the volcano Pavlof on the Alaskan Peninsular. McGuire himself has found evidence in the Mediterranean of enhanced volcanic activity at times when sea-level rise was rapid. Latest studies indicate we may experience over a metre sea-level rise by the end of the century. The question is: will it just be small to medium eruptions that become more frequent as sea-levels rise, or will

it unleash dormant large ones like the Tambora blast in 1815 that cooled the world for at least a year.

But what of faults, and earthquakes? The recent cluster of major earthquakes (Sumatra, Chile, Japan) in less than a decade has made people (not unreasonably) wonder if there is a climate connection. Given that sea-level rise can stabilise off-shore subduction zone faults that play host to the world's biggest earthquakes,

and that sea-level rises have been small, climate change is not implicated. On the other hand, rising sea levels may shift the seismic focus at subduction zones landwards, promoting deeper earthquakes inland and making them more destructive to towns. And laterally moving faults, such as the San Andreas fault of California, may generate earthquakes more easily as they are 'unclamped' due to rising sea-levels bending the Earth's crust where ocean meets land.

Most worrying is the fate of the gas hydrates (often methane hydrates) that lay locked away on the ocean floor. Rising sea temperatures are likely to release the gas (potentially catastrophically in the case of methane since it is such a potent greenhouse gas) but higher sea-levels will increase pressure to keep them intact. In the Arctic region, 1.4 trillion tonnes of gas hydrate and methane are locked in the submarine permafrost, but already 10 per cent of the area is punctuated by *taliks*; areas

*I cannot imagine an "economic path to degrowth". Can anyone else? It's literally impossible because all of our institutions - every last one of them - depends upon economic growth for its existence. Agree? Degrowth MUST come from unplanned hardship and planned politics. (Economic degrowth: by this I mean reversing our footprint on Earth through deliberate market mechanisms (e.g., Pigovian taxes).)*

*Jay Hanson*

*Posted on the internet, 21 June 2012*

of thawed permafrost that provide avenues for the escape of methane and for the warming of the frozen hydrate beneath. It is, indeed, as McGuire notes a 'recipe for climate catastrophe'.

He concludes that we are currently loading the dice in favour of geological mayhem at a time when we can most do without it. "At a time when an additional 220,000 people are lining up at the global soup kitchen each and every night; when energy, food and water resources are coming under ever-increasing pressure; and when the debilitating effects of climate change are insinuating themselves into every nook and cranny of our world and our lives, the last thing we need is for the giant beneath our feet to reawaken."

This is a fine, well-written book. I recommend it highly.

**Jenny Goldie**

## Planet under pressure conference

London, March 26-29, 2012

I lived in Vietnam for three months in 1975, just prior to the end of the war. Confined to Saigon, I was spared the harsh realities of war until the last week of our stay. Refugees from the countryside crowded the city as the North Vietnamese continued on their relentless push south. People were agitated, frightened, sometimes hysterical. My family evacuated safely with the first airlift of orphans to Australia in early April, well before the North Vietnamese took the city, but it was months before I could talk about that final week.

There was a parallel with the *Planet Under Pressure* conference in London. The message coming out of the conference was so grim that, weeks later, I could hardly bear to read my notes, let alone talk about it. There is an awful disconnect about what I heard at the conference and the banality and facile nature of Australian politics and media.

There were many impressive speakers, not least our very own Climate Commissioner Will Steffen whose comprehensive keynote address on climate change sent alarm bells ringing through the conference. His was probably the presentation most referred to by other speakers. Some of us are familiar with what Will has to say, but in brief, here it is again: We

have seen significant change since 1950; change is not always linear, however, and we could well face tipping points when change accelerates; both West Antarctica and Greenland are losing significant mass; fires in a drying Amazon may undo decades of carbon sink activity; there is twice as much carbon in the permafrost as in the atmosphere; because of preferential warming in the high latitudes, by 2300, there could be 54-85 times the carbon emissions from the permafrost as current emissions.

Lord Anthony Giddens said the situation was bleak with carbon dioxide levels now 393ppm and accelerating. No country was on track to keep the temperature rise to 2°C. Sweden was doing best but their overall contribution was small. "The Anthropocene is a runaway world, outstripping our efforts to constrain it," he said. He said we had no historical experience to help resolve it. "We need a paradigm change otherwise industrialised society could be wiped off the Earth."

So what is involved in this new, necessary paradigm? According to Lord Giddens, there are three elements. First, much of the action will have to be below the nation-state level to harness real change on the ground. The Transition Towns movement is a

good example. Second, because the UN has lost a lot of influence, we will need more bilateral agreements. Hopefully the NICs (Newly Industrialising Countries) such as China and Brazil will play a leadership role in moving away from fossil fuels and adopting renewables. Far more effort is required to close down coal-fired power stations and, indeed, China is already closing its older plants. Third, we need a new kind of politics and a new kind of development. India and China simply cannot mimic the West as it is too destructive. What is needed is 'system change' such as the wholesale transformation of transport.

Sir John Beddington, UK Chief Scientist, agreed that massive changes are needed. "How do we provide food, water and sanitation for the extra billion people in the next 13 years?" he asked. Feeding that extra billion can only increase greenhouse gas emissions. The UNFCCC talks in Durban did not even have agriculture on the agenda, he noted.

*When a population becomes distracted by trivia, when a cultural life is redefined as a perpetual round of entertainment, when serious public conversation becomes a form of baby-talk, when, in short, a people become an audience and their public business a vaudeville act, then a nation finds itself at risk; cultural-death is a clear possibility.*

*Neil Postman  
Amusing Ourselves to Death, 1985*

The issue of having another billion people was the focus of attention of others. Caroline Spelman, UK Minister for Environment, Food and Rural Affairs said emphatically: "In 13 years time, we will have another one billion people. You need no further evidence that the planet is under pressure." She cited the Foresight Report that said 'global food demand to 2030 and beyond is set to rise at a rate that is neither sustainable nor feasible'. On a more positive note, she said a new 'natural capital committee' had been set up to advise the Government, along with a new 'ecosystem assessment program' to equip local communities in valuing local ecosystems.

Sir Bob Watson, co-winner with James Hansen of a 2010 Blue Planet award (Japanese equivalent of the Nobel Prize) for his climate change work, put population at the top of his ten challenges. "The more people you have, the more demand you have for natural resources," he said, noting that we are responsible for the current sixth great

*They're making more people every day,  
but they ain't makin' any more dirt.  
Will Rogers*

extinction event whereby we are losing species at 100-1000 times the background rate. Watson said a warmer world was inevitable with only a 50 per cent chance of keeping it to 3°C. We will have to adapt and to do this we need "good governance, good governance and good governance." This should include green taxes and an end to damaging subsidies. "20 years ago we thought governments would look after us but they haven't. The age of innocence is over," he said.

Sandra Diaz, Professor at Córdoba National University in Argentina, said the fabric of life was changing shape with far more domesticated landscapes. There had been a "trophic downgrading" of the Earth with loss of large animals, both on land and in the oceans. There had been both top-down and bottom-up forcing of ecosystems which will lead to abrupt changes when tipping points are reached. For instance, there will be rapid degradation of coastal ecosystems from excessive nutrients plus the loss of fish. There are some positive changes, however, with an increase in protected areas, some decline in the nutrient load and an increase in certified managed forests. She concluded that "the fabric of life is deteriorating fast and taking with it many things vital to humanity." Interestingly, she said that many ecosystems will not revert to natural states on their own so some will have to be 'gardened back' or 'gardened forward' to functionality.

There was a lot more to be said on food security – or lack of – during the conference. Some predictions stood out, for instance, by 2050 there will be a 50 per cent reduction in wheat growing in the Indo-Gangetic Plain due to heat. There is very little new agricultural land available so restoration of degraded land will be a priority. Conversion of any further forest or grassland to agriculture would be very bad for climate change. In launching a new booklet *Achieving food security in the face of climate change*, Sir John Beddington said: "The urgency of the situation is quite dramatic."

On the last day, Richard Norgaard, among the founders of ecological economics and professor of Energy and Resources at the University of California, Berkley, said that we rich had to sacrifice so that future generations can have some ecosystem services. Indeed, the rich countries are \$4.7 trillion in ecological debt to the rest of the world. We had structured our economy around "Work-eat-buy-consume...and then we die" ethic. We need a new model and the 'invisible hand' has to be told where to go. We need to start with the vision and work backwards.

Bo Kjellen from the Stockholm Environment Institute summed up, saying: "Business as usual is not an option. The time to act is now."

**Jenny Goldie**

---

## Farrago

Elinor Ostrom, who died recently, was awarded the Nobel Prize in Economics in 2009 for her work on cooperative management of common resources. Rather than thinking the only way around the famous Tragedy of the Commons problem was either to put the commons into private ownership or into government management, she found a third very satisfactory way was being practised in many traditional communities.

Amongst the examples she found of cooperative management were forests in Nepal, irrigation systems in Spain, villages in Switzerland and Japan, fisheries in Maine and Indonesia. The people drew up sensible rules for sharing the resource, and worked together to perform regular repairs. Anyone who would not follow the rules was fined. Repeated offences led to exclusion from the resource.

Ross Gittins, *The Sydney Morning Herald*  
9 July 2012

---

## A Letter to Thoreau

No one in your time could imagine a disaster of this magnitude. Little more than a billion people were alive in the 1840s. They were overwhelmingly agricultural, and few families needed more than two or three acres to survive. The American frontier was still wide open. And far away on continents to the south, up great rivers, beyond unclimbed mountain ranges, stretched unspoiled equatorial forests brimming with the maximum diversity of life. These wildernesses seemed as unattainable and timeless as the planets and stars. That could not last, because the mood of Western civilization is Abrahamic. The explorers and colonists were guided by a biblical prayer: May we take possession of this land that God has provided and let it drip milk and honey into our mouths, forever.

Now, more than six billion people fill the world. The great majority are very poor; nearly one billion exist on the edge of starvation. All are struggling to raise the quality of their lives any way they can. That unfortunately includes the

conversion of the surviving remnants of the natural environment. Half of the great tropical forests have been cleared. The last frontiers of the world are effectively gone. Species of plants and animals are disappearing a hundred or more times faster than before the coming of humanity, and as many as half may be gone by the end of this century. An Armageddon is approaching at the beginning of the third millennium. But it is not the cosmic war and fiery collapse of mankind foretold in sacred scripture. It is the wreckage of the planet by an exuberantly plentiful and ingenious humanity.

Edward O. Wilson, prologue to *The Future of Life*, 2002

I think this deluge of new chemicals that has arrived within the past century, chemicals that are novel to the human body, I think they are moving us to the period of the most rapid evolution that our species has ever experienced. It is changing which genes make it through to the next generation; and who has the wrong genes is going to be less able to have progeny and that's a definition of evolution and that's what I think is happening today.

Unidentified scientist

Transcribed from the 2008 CBC video

*The disappearing male*

<http://www.informationliberation.com/?id=26130>

## Humans a part of the natural world, not mere observers of its form

The more we exile ourselves from nature, the more we crave its miracle waters. Just as our ancient ancestors drew animals on cave walls and carved animals from wood and bone, we decorate our homes with animal prints and motifs, give our children stuffed animals to clutch, cartoon animals to watch, animal stories to read. We call one another by "pet" names, wear animal-print clothes. We ogle plants and animals up close on television, the Internet and in the movies. We may not worship the animals we see, but we still regard them as necessary physical and spiritual companions. Technological nature can't completely satisfy that yearning.

But what if, through novelty and convenience, digital nature replaces biological nature? Studies show that we'll suffer. Richard Louv writes of widespread "nature-deficit disorder" among children who mainly play indoors - something new in the history of humankind. He sees it

leading to attention problems, obesity, depression and lack of creativity. Adults suffer equally. Patients with a view of trees heal faster than those forced to stare at city buildings. In studies conducted by Peter H. Kahn and his colleagues at the University of Washington, workers in windowless offices were given flat screen views of nature. They reaped the benefits of greater health, happiness and efficiency than those without virtual windows. But, importantly, they weren't as happy, healthy or creative as people given real windows with real views of nature.

Diane Ackerman, *Nature: Now Showing on TV*, New York Times, 23 June 2012

## Acidic oceans

Human induced CO emissions are acidifying the oceans at an unprecedented rate. The pH is now dropping by about 0.1 per century, harming corals and shell fish. By studying the chemical record in rocks, researchers found that the best match for today's acidification was the Palaeocene-Eocene thermal maximum of 55 million years ago, when a huge release of greenhouse gases caused rapid global warming, ocean acidification and mass extinctions. In that event it took 3000 years for oceanic pH to drop 0.5 - a change we'll achieve in 500 years at the present rate.

*New Scientist*, 10 March 2012



Contributions for the next edition of *Nature and Society* are invited now from all members. They should be sent to the editor, Jenny Wanless, 22B Jensen St, Hughes ACT 2605, ph 02 6281 3892, or to our office by 21 September 2012.

Contributions may be sent on paper or electronically. Electronic submission is preferred.

Items in *Nature and Society* do not necessarily reflect the opinions of the majority of the Forum members, but are published in the hope of stimulating thought and discussion about biosensitivity.

Jenny Wanless and Keith Thomas prepared this edition together with the named contributors; Jenny and Keith also contributed the unattributed items and provided the quotations.

**Please circulate *Nature and Society***

Use this copy of *Nature and Society* to help spread the word about healthy people on a healthy planet and our quest to increase biounderstanding. When you have finished with your copy:

- Give it to a friend
- Circulate it at work
- Place it in a doctor's waiting room, or other professional office waiting area
- Pass it on to a relative, acquaintance or neighbour

We are specially keen to get more concerned interested young people acquainted with *Nature and Society*, so please use your imagination to help us achieve this. We can send you additional copies of *Nature and Society* free of charge for this purpose.

If you know of someone who'd appreciate a free set of recent editions of *Nature and Society*, please let us know and we'll do the rest.

**Nature and Society Forum membership form/tax invoice (includes GST) ANB 52 456 986 523**

I/We would like to:

- become a member, and enclose payment for \$ .....
- renew my membership
- make a tax-deductible donation of \$ ..... to the Nature and Society Forum
- Find out more about .....

Annual membership \$55 per person  
 Concession \$22 per person  
 (students, welfare pensioners)  
 Life membership \$550 per person  
 Corporate membership \$110

**Payment:**  Cheque

Electronic funds transfer to NSF  
 account 1047492 at BSB 801-009

Name: .....  
 Address: .....  
 .....  
 ..... Postcode: .....  
 E-mail: .....  
 Telephone: .....  
 Date: .....

Please send completed form and payment to Nature and Society Forum  
 GPO Box 11, Canberra, ACT 2601