

Nature & Society

The Journal of the Nature and Society Forum

December 2008 - January 2009

Editorial

Prime Minister Kevin Rudd is reported to have told a Business Council of Australia dinner "You all know that in business everything is connected to everything else."

Rudd was explaining that there was only so much the Australian Government could do to rescue Australian business, considering the parlous state of so much of the world's economy. It has been interesting, amusing, annoying or gratifying, depending on your point of view, to see so many governments suddenly find billions of dollars to prop up banks and commercial systems.

Compare this with their miserly attitude towards financing really important infrastructure such as renewable energy projects, or saving natural systems such as forests and rivers, or caring for the displaced and hungry of the world. If they really want to throw billions at saving the economy, then investing in renewable energy, in Australia at least, would probably do the trick. We could capitalise on important Australian advances in photovoltaic and solar thermal technologies, wave power and geothermal energy. We could reconfigure our power grid to include all these sources, and phase out some of the least efficient coal power plants.

These actions would secure long term gains for the whole population, creating many new jobs and making our society more sustainable. There are opportunities galore in restructuring the economy to protect the environment, build genuinely energy efficient buildings that are comfortable in all weathers, promote local food production, improve public transport and provide well staffed and sufficient health and education services.

Of course there will be losers whose jobs will go; this is inevitable and has happened throughout history. Probably embalmers were

upset when the Egyptians stopped mummifying bodies. Definitely small farmers were upset when they were displaced from the land and had to work in factories and mines. Today, farmers are upset when global warming and the resulting drying of their regions drive them off their land. In turn factory workers and miners are upset when their jobs cease to exist, but like their ancestors they need to move on to new industries and occupations. They may in fact find them more interesting and even enjoyable.

The developed countries have a responsibility and an obligation to respond to climate change by altering their unsustainable way of life.

*Chinese Premier, Wen Jiabao,
November 2008*

Even if the burning of fossil fuels was not changing the climate and acidifying the oceans, the end of the Oil Age would force change upon us. In the context of the financial upheaval the

Governor of the Reserve Bank supported emergency measures with the opinion that "desperate times call for desperate measures". Well, the current "desperate times" may soon be seen as a tiny precursor to one of the most desperate shocks humanity will ever experience.

If, instead of throwing money at failed bankers, or giving money to the public and urging them to spend to keep the economy growing, governments were to start major projects to move us all to low-carbon economies they would significantly lessen the shocks to come. If they were to understand that a growing economy (and population) is the root cause of

Contents

NSF news and meeting reports	3-6
Book reviews:	7-12
<i>Climate Wars, The Omnivore's Dilemma, The Face in the Smaller Picture, The World without Us, Play As If Your Life Depends on It</i>	
This is your captain speaking	13-14
Farrago	14-15

the problem, not a solution, then we could perhaps look forward to the future.

A year ago Australia looked forward with hope as a new Government took over, but many hopes have been dashed. This Government is still completely wedded to the idea of growth, it still seems to be in thrall to the fossil fuel industries, it has been half hearted in all its environmental policy. The Government simply shows no understanding that we live in a finite world, and are totally dependent on the natural processes of that world to sustain us: in short it has no biounderstanding.

We need to look forward to a steady state economy. We must stop mining the soil, polluting the water, killing the oceans. We should recycle all our wastes getting most of our minerals not from mines but from rubbish dumps, use only renewable energy, grow our food locally and renew our soils with our compost. We need to understand that everything is indeed connected to everything else. Times are desperate, and the measures we take must be a huge change from our past practices, although these will seem desperate to those who cannot understand the need for change.

The growth we need to be seeking is not that of constantly increasing material wealth: this has been found to be a short-lived and unsatisfactory pleasure. We should look for growth in human dignity and happiness, social support, good health, cultural riches in the arts and sciences and a well developed appreciation of the wonders of life in all its rich diversity on this amazing planet. We need a biosensitive society.

With the election of Barack Obama as next president of the United States we have a last chance to set the peoples of the world on a path that could lead to a sustainable future. Action needs to begin now, we have wasted too many decades shutting our eyes to the problems human profligacy and selfishness have inflicted on the Earth.

The Earth, our only home and essential life support system, has been slipping ever more quickly into a damaging fever, made worse by the quack remedies promoted by many of our institutions. If we can act quickly now, then indeed it will be a happy new year.

Jenny Wanless

The NSF board

The NSF board coopted three members for the remainder of 2008-09: Sue Nancarrow, Gilles Rohan and Keith Thomas. Sue has agreed to take on the very important role of Treasurer. Thank you to all three.

In the last issue of *Nature & Society*, we inadvertently omitted Wendy Rainbird's name from the list of the new board. Our apologies to Wendy for this error.

The Board now consists of Ian Anderson, Stephen Boyden, Val Brown, Tony Capon (chair), Rory Eames, Sue Nancarrow, Wendy Rainbird, Gilles Rohan and Jenny Wanless. Keith Thomas has subsequently withdrawn from the board.

A luddite reaction always seems to pale before the magnitude of what it faces. There is a very long, sedimented history behind every newest technological move, an unbroken chain of contingency. The leap involved in grasping new technics is made easier by the gradual impoverishment of human desires and aptitudes caused by the earlier innovations. The promise is, always, that more technology will bring improvement – which more accurately means, more technology will make up for what was lost with the preceding advances.

John Zerzan, Twilight of the Machines (2008) p 111

Frugality vs alternative energy

The environmental community, at least in the US, is weak when it comes to talking about lifestyle changes, about consumption, and it is reluctant to challenge growth or the power of corporations. A lot of the big issues have political immunity.

...The economy we have now is an inherently rapacious and ruthless system. It is up to citizens to inject values that reflect human aspirations rather than just making money. But groups, whether they're concerned about social issues, social justice, the environment or effective politics, are failing because they are not working together. I want to see them join into one hopefully powerful political force.

Gus Speth, in 'Beyond Growth', *New Scientist*, 18 October 2008

Nature and Society

ISSN: 1038-5665

Editor: Jenny Wanless

Publisher: Nature and Society Forum 2008

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

Fax: +61 (2) 6125 1756

E-mail: office@natsoc.org.au

Website: www.natsoc.org.au

Where we are

Room E-319-A in the old building of the John Curtin School of Medical Research at the Australian National University in Canberra.

From the entrance use the intercom phone to call the NSF office on extension 52526.

By car: There is a two-hour car park in Balmain Lane, 300 metres to the south of the office.

By bus: The route 3 bus from Civic drops you off at the foot of Eggleston Road. Walk 250m south up the hill and turn right; from there the entrance to the building is visible.

By bicycle: Plenty of bicycle parking on the ANU campus.

Coming NSF meetings

For the latest information visit our website www.natsoc.org.au and click on "What's On". There you will also find a link to maps to direct you to the venue.

Tuesday 9 December, 7:30pm - *Evolutionary Health Principle* - end-of-year event

A talk, demonstration and discussion about how we can bring our lifestyles into line with the Evolutionary Health Principle. This will cover diet, physical activity, sleep, mental well-being and sustainability. We will also look at ways to bring all these together in enjoyable ways. For more information see the book review on page 10.

Venue: The Emeritus Faculty, ANU campus

Wednesday 21 January 2009, 7:30pm - *100 months to save the planet*

Walter Jehne will lead a discussion on steps we need to take to address the climate change challenges. This talk takes the discussion of 19 November on to the next stage.

Venue: The Emeritus Faculty, ANU campus

Wednesday 18 February 2009, 7:30pm - A showing of the movie *Scarred Lands and Wounded Lives* with a talk by the film makers, Alice and Linc Day, who are long-time supporters of Nature and Society Forum.

More information about the movie is available here:

www.fundforsustainabletomorrows.org

Venue: The CSIRO Discovery Centre. Turn up the hill from the roundabout in Clunies Ross Street and follow signs to the Discovery Centre.

Vale Peter Hamilton

Peter Hamilton, long-time member and supporter of NSF, died in October.

Peter was known and loved for his passion and commitment to community, sustainable lifestyles and the environment.

He played a leading role in the campaign in the Byron Bay region that resulted in the declaration of Arakwal National Park. He helped to found the Bodhi Farm community and lived there.

Peter had trained as an architect. He was interested in low cost architecture and cohesive social interaction. He studied Aboriginal wiltja (shelters), focusing on the construction and design in relation to desert conditions and social interaction.

In addition Peter was a pioneer in Australian folk music recording, and was a co-founder of Wattle Records and Films in the 1950s.

Peter hoped and worked for a society in which people and governments would work together to create a sane and sustainable society.

Our Experience of Time

The twin epidemics of obesity and diabetes figure prominently in the news, with fat people frequently waddling across our TV screens. Although many causes have been suggested, the basic fact is that fat is the result of an imbalance between the amount of energy ingested and the amount of energy expended. The suggestion that more exercise would reduce the amount of fat is hardly controversial, but when people are asked why they do not exercise, the reply is usually that they haven't time to do so. At the same time they eat snack food rather than taking the time to cook and eat food that would be healthier and less fattening. In an Australian study experts ranked car reliance and time pressure as the two most important social trends underlying obesity.

Similarly the twin problems of human induced climate change and of the looming shortage of oil and high petrol prices could be at least alleviated if people walked, cycled or used public transport rather than private vehicles. However the stock reply to such suggestions is that the person concerned can not do so because it would take too long. Two thirds of Sydney drivers said they would use public transport if it was as quick as car travel.

If shortage of time is preventing people from doing things that would be beneficial to their health and the health of the environment, then public policy needs to take account of it. There is no point in promoting a policy that will simply not work. Lyndall Strazdins is investigating our experience of time in these contexts, and she spoke to us about her work at our October public meeting.

People think of time as a resource, like income, which is limited and valuable. The demand on peoples' time, and their control over their own time is not distributed equally. When people are used to seeing time as money, any activity must include the value of the time. Uncommitted time becomes scarcer and more valuable, and this influences choices and behaviour.

The eight hour campaign last century aimed to achieve a work-life balance: people should not have to work very long hours. They should work for eight hours, and have eight hours for sleep with the other eight hours for recreation, time with family etc. The

eight hour day campaign achieved its aims, but now the picture has changed again, with many people working very long hours. Since the 1980s about a third of the fulltime workforce has reverted to fifty or more hours of work a week, with much of the extra being unpaid overtime. With the extra work also comes more stress, with work intensification, and technological intrusion in the form of laptops, mobile phones etc. With the just-in-time workforce there is less downtime and greater stress.

In the 1970s when most families had a single breadwinner, the paid work time for most families was forty five hours per week in the USA. In 2000, of families with children, forty three per cent had dual earners, and a corresponding increase in total paid work hours. In the USA this was 82 hours, and 75 hours in Australia. The result is time poverty for many people. Most mothers who are in full-time jobs

are always or often rushed, as are 45 per cent of full time employed fathers.

In addition there are an increasing number of people who are carers for aged, sick or disabled family members and these suffer heavy demands on their time. The situation will worsen with the rising proportion of elderly people in the population; there is a

corresponding push to delay retirement and keep older people in the workforce.

Another group who suffer a comparative disadvantage are the dwellers in outer suburbs, who generally have long commuting times and poorer resources, so are forced to drive to work. These factors combine to push down the value of their properties, and widen the accompanying wealth and time inequalities between outer and inner city dwellers.

Although everyone has 24 hours in their day, different people's time is considered more or less valuable. Perceptions change, as do priorities. With efficiency a modern 'god', wasted time is a sin. People are expected to multi-task, do more in every minute. But is this efficient? Our choices reflect values and priorities, but to be able to make choices we need freedom and the will to act. Not everyone has this freedom.

The will to act, plus the freedom to do so together make up what is called agency. Amartya Sen has opined that agency is central to solving problems

Compared with 1997 Australians today are:

- working longer
- sleeping less
- spending (even) less time exercising or eating

from poverty to the environment. Different kinds of freedom strengthen each other and boost agency.

Health and environmental interventions take time and to ignore time poverty is a major disincentive to their implementation. To make them successful it will be necessary to compensate in some way and address time costs.

Lyndall's team has been analysing various case studies. They have been studying the time burdens of various interventions, and their impact on individuals and families, in different locations from local neighbourhoods to city wide. But they have found that very few interventions consider time at all.

One program that does is a Western Australian media campaign (now extended to ACT and Tasmania) called *Find Thirty*, encouraging people to find thirty minutes each day to exercise. This successfully raised peoples' awareness that thirty minutes of exercise daily would be beneficial, and 41 % actually tried to increase activity.

Another WA initiative, *Be Active*, used ambassadors to promote time-conscious activity programs via a website, supplying a month of daily strategies for making busy lives more active. They focussed on changing perceptions and valuing of exercise time, trying to make exercise fun, convenient, social, easy and achievable. Tips included taking the stairs rather than waiting for the lift or walking around while you were talking on the cordless or mobile phone.

Raising Successful Children, a US program targeting parents of children with behavioural problems, recognised time as a barrier to uptake. The providers helped to compensate for time by providing services such as meals, childcare and transport. This achieved a 70% participation rate.

The *Walking School Bus* in Victoria has groups of children walking to school together, supervised by a volunteer. The idea is to provide exercise and reduce the number of cars arriving at school, thus decreasing congestion and improving safety. It redefines travel time as healthy social time. Evaluation of the program showed that the Walking Bus has a high time cost for the schools, the

coordinator and volunteers who 'drive' the bus, but saves time for parents of children who use the bus. Paid coordination reduces some of the time costs, but parent volunteering provides ownership of the scheme along with social benefits, and costs the government less.

Other schemes evaluated include the *Active Transport Tool* (Victoria), *Liveable Neighbourhoods* (WA), *Travel Smart* (ACT) and *Time Offices* (Italy).

In all, it is recognised that time is a resource, and is getting scarcer for some people. Paid work time is considered valuable and limited for most people. Non-work time is borderless and cost-free, at least from some viewpoints.

Some possible actions would be to consider neighbourhoods, and the time-distances for walking to facilities such as shops, schools, medical

services. Councils could provide this information on maps. They could increase residential density, so more people live within walking distance of these services.

Industry could give employees time each day to exercise. They could encourage active travel. Flexible work hours, such as a week of four nine-hour days, could provide more time for healthy activities.

The ANU team is now interviewing stakeholders and after completing analysis they will refine and test methods, before publishing a TimeKit. The Kit will be a case study dossier

designed to be useful for people involved in health promotion, transport and sustainability policy designers and urban planners.

Jenny Wanless

Virtual vs biophysical reality

Virtual reality is now the definitive expression of the postmodern condition, perhaps best typified by the fact that nothing wild exists there, only what serves consumption.

John Zerzan, *Twilight of the Machines* (2008) p 110

NSF meeting report

100 months to save the planet

19 November 2008

Walter Jehne explained to us why we have less than two years to implement the changes and ten years for them to become effective if we are to cool regional climates to offset greenhouse warming and dangerous climatic damage by 2030.

Walter gave us an update on his talk to us in October 2006. He presented recent evidence of climate change more rapid than predicted by the IPCC in even its latest report and also the implication of 'capture' of the climate debate by physicists in the 1970s (the US government-sponsored 'Jasons') – a process that progressively excluded weather observations and biology in favour of global climate models comprising variables most conducive to computer modelling. Walter pointed to ten actions in each of ten fields which could actually restore rainfall, moderate temperatures and increase resilience.

Among the most useful things to come out of the evening emerged in the discussion period. Discussion and debate such as this is something NSF endeavours to do well and this discussion was thought-provoking. Some people at the meeting were disappointed that Walter devoted more time to describing the problem than in discussing possible solutions. However, Walter explained that he wanted to dwell on the observed climatological phenomena and understanding them before jumping into solutions. Walter's presentation looked beyond CO₂ emissions as the prime causal factor in climate change to the many ways in which human behaviours have disrupted natural, interdependent cycles of carbon, water, life (plant and animal). By understanding these highly complex systems we can best determine the points in those systems at which humans can intervene with a minimum risk of further damage to the biosphere's processes.

CO₂ emissions is a small though important contributor to anthropogenic climate change, but we need to step back to look at the full picture before we jump in with solutions. It's no good having one hundred things to do, no matter how slick and glossy the plan, if they are not the best actions to address the actual problem.

Another contributor to the discussion suggested that the situation was so dire, the nation should be put on a 'war footing' and that Australia needed a Churchill

to focus the activity of government and citizens on dealing with climate change.

Yet another member said this showed that government has a prime role to play in leading the public through legislation such as the regulations imposed by the governments of warring nations on their citizens in World War 2. A comment made in response to this was that if there is a war, the enemy is us.

This brought the discussion to the human side of climate change. All Walter's hundred actions were, to some extent, technical and designed to be implanted directly in the biophysical world. However, technical solutions are one thing, and even though enough people on the planet understand the range of technical solutions to CO₂ emissions, they still can't get significant practical action started. Another member distributed a paper *Are Human Beings Hard-Wired to Ignore the Threat of Catastrophic Climate Change?* and pointed to the most difficult problems being not technical but human. It's in the human mindset to reject the diagnosis and the cure – we are a species that has almost no place in its cerebral plumbing to deal with global climate change, particularly with our dopamine being stimulated in so many other ways through media and consumerism.

Another member of a more individualistic bent said we all have to take responsibility and move ahead of governments. And there were yet others of a more anarchistic inclination who said governments have demonstrated their inability to act effectively for the past decade and individualism has demonstrated its inadequacy in the face of hegemony of the status quo and its power relations – for him communities must act unilaterally and promptly.

So, although we did not reach agreement, we all came away understanding better the complexity of the biophysical problem and that solutions will need to embrace biophysical sciences, evolutionary psychology, politics and the hard work of community organisation and activity. Not only is CO₂ emission reduction not the silver bullet – there is no silver bullet.

This talk will be continued at our 21 January 2009 meeting, where we will look in more detail at the technical steps that can be taken, including local measures that are effective in the face of this global problem.

Keith Thomas

Apocalyptic horsemen riding by

Climate Wars by Gwynne Dyer, Scribe, Melbourne 2008

The Omnivore's Dilemma, by Michael Pollan, The Penguin Press, New York 2006

The Face in the Smaller Picture by Melvin Bolton, Ribbonwood Publications, Yeppoon 2008

The four horsemen of the new apocalypse are climate change, peak oil, (over-) population, and disease. This includes the afflictions of affluence like heart attack, cancers, and obesity, as well as the acquired loss of resistance to classic scourges (TB, cholera, dysentery, 'flu) that are waiting in the wings to re-appear when times get tough.

Gwynne Dyer is the doyen of polemologists, perhaps best known for his book and TV series *War* (1985) and for his regular newspaper columns about international affairs. He is unusually well-informed, and writes with an easy style about the facts of history or the scenarios of the future, the set-pieces of his new and scary book, *Climate Wars*. In this piece of 'future history' he constructs a number of scenarios – the world in 2045, the US in 2029, China in 2042, and so on. The scenarios are interspersed with more analytical chapters investigating how things have come to such a pass, who did what – today – which caused such a result – tomorrow – and what if anything we should be doing about it.

The scenarios are indeed scary ... 'an acute and permanent crisis of food supply ... a dawning awareness that in a number of great powers, climate-change scenarios are already playing a large and increasing role in the military planning process ... a probability of wars, including even nuclear wars, if temperatures rise 2 to 3 degrees Celsius.'

The scenarios, says Dyer, are not intended to be predictions, but examples of the kinds of political crisis that could be caused by climate change. For example:

Since the final collapse of the European Union in 2036, under the stress of mass migration from the southern to the northern members, the reconfigured Northern Union (France, Benelux, Germany, Scandinavia, Poland and the old Habsburg domains) has succeeded in closing its borders to any further refugees from the famine-stricken Mediterranean countries. Italy, south of Rome, has been largely over-run by refugees from ever harder-hit North African countries and is no longer part of an organised state ...

This is indeed gloomy stuff. But is Dyer a total pessimist? He does have some heroes, like Dennis Bushnell of NASA, who is an optimist about energy (if we can somehow close down the entire oil, gas and coal industries); and Amory Lovins of the Rocky Mountains Institute, George Monbiot (*The Guardian*) and Lester Brown of the Earth Policy Institute who

says (in a 2008 interview with Dyer): "things are beginning to happen on a scale that's commensurate with the nature of the challenge and threats that we are facing."

There's just time, says Gwynne Dyer, if we manage to get it right; about half a century, but mainly in the next twenty years. Every choice we make has to be the right one. "It's not just about knowledge and technical ability; it is also about self-restraint and the ability to co-operate. Grown-up values, if you like."

A book about food seems self-indulgent in the context of

global catastrophe, but Michael Pollan's *The Omnivore's Dilemma* contains many of the seeds of that very catastrophe. As Dyer notes, eating regularly is a non-negotiable activity, but few of us are aware how much this activity has changed in the past two decades. Pollan is a professor of journalism, and his book is a pleasure to read, as well as being a cornucopia of information, much of it worrying, as he analyses four meals: a "typical" north American meal (McDonalds, eaten in a moving car), an "organic" meal as provided by the industrialised organic farming industry, a farm meal on one of the last mixed farms in business, and a meal which he hunts, gathers and cooks himself. (He goes to the trouble of learning to shoot, acquiring a hunting

How could so many smart people have got it so wrong? One reason is that their faith in their models' predictive powers led them to ignore what was happening in the real world. Finance offers enormous scope for dissembling: almost any failure can be explained away by a judicious choice of language and data. When investors don't behave like the self-interested Homo economicus that economists suppose them to be, they are described as being "irrationally exuberant" or blinded by panic. An alternative view - that investors are reacting logically in the face of uncertainty - is rarely considered.

*New Scientist editorial
27 September 2008*

license, and shooting a wild pig to be served with wild mushrooms.)

The American – and by extension European and Australian – food industries do not come out of this with credit. Pollan follows each of his meals back to its sources, and concludes that the McDonalds meal in particular is part of a calculated strategy to persuade consumers to consume, not only more than they possibly need, but more petroleum-derived food additives and more corn-based fats and sugars. Corn, or maize, says Pollan, has made an evolutionary jump by which it has achieved a sort of dominance over human beings – not the other way round – as it has become essential to the industrial food process. Food for feedlot cattle (whose natural diet is grass, and who have to be chemically induced to eat and digest corn), the feedstock for synthetic sugars and starches and colours, and the mainstay of industrial farming and transport. Ironically, as farmers produce ever more corn, the price drops ever lower, farmers become ever more economically dependent on Federal subsidies; and American consumers become less healthy and more obese – not, says Pollan, because they are necessarily eating more, but because they are eating food which itself is not healthy.

Pollan is witty, eloquent, and definitely a foodie. But the fundamental message of his grimly entertaining book is that industrial food production is not sustainable: climate change, peak oil and population pressure will bring it to an inevitable end.

Entertaining is often a good way of spreading the message, and Melvin Bolton has chosen adventure fiction as his way. Author of *Ethiopian Wildlands* and *Conservation and the Use of Wildlife Resources*, *The Face in the Smaller Picture* is his fourth novel. A member of Sustainable Population Australia, Bolton takes people-smuggling as his theme, his hero an Australian customs officer specialising in border security. Set in the near future, the story moves from Australia to Ethiopia; the villains are villainous, the simple farming folk of Ethiopia are good-natured and courteous. In the background, climate change is cutting in: “Much of Bangladesh is under water again, so are parts of India, south Asia and now even the Nile delta has been hammered ...”

Bolton’s Europe, like Dyer’s, has become a fortress, besieged by hungry hordes. Its defences harden, and the refugees and the people-smugglers turn their attention increasingly to Australia. As in the best of airport novels, Bolton’s hero is effective, the girl is saved in the end, but – unusually – there’s an urgent and serious undertone that conservationists will approve. Again quoting Dyer: “When you talk to the people at the sharp end of the climate business, scientists and policy-makers alike, there is an air of suppressed panic in many of the conversations. We are not going to get through this without taking a lot of casualties, if we get through it at all.”

Nick Goldie

Book review

The World Without Us

Alan Weisman
St Martins Press 2007
324pp. \$27.95 paperback

Without us, Earth will abide and endure; without her, however, we could not even be.
Alan Weisman.

What would happen to the Earth if humans disappeared, virtually overnight? This is the theme of this beautifully written book.

Weisman takes us on a long journey, beginning with the unspoilt wilderness of

Bialowieza Puszcza that straddles Poland and Belarus. This is Europe’s last remaining fragment of lowland old growth forest where 500 year old oak, ash and linden trees shade an understorey full of fallen branches and logs that nourish thousands of species of mushrooms lichens, bark beetles, grubs and microbes. These in turn support a host of animal species including weasels, pine martens, raccoons, badgers, fox, lynx, wolves, roe deer, elk and eagles. All of Europe was once like this.

At the end of his journey, Weisman takes us to the marine equivalent of the Bialowieza Puszcza - to uninhabited Kingman Reef in the Pacific, a thousand miles southwest of Hawaii. It too is a ‘time machine, an intact fragment of what used to surround every dot in this big, blue ocean.’ Big carnivores like sharks and red snapper account for more biomass

Sorry, but “we” can’t save the planet even if “we” halve our energy use by tomorrow. I’m not suggesting that individuals should not make every change they can, but they should not harbour any illusions that personal behaviour, however carbon-virtuous, can do the trick. The worst offenders will not desist and voluntary measures are ineffective. Scale is the problem, and our task is to promote a quantitative and qualitative leap in the scale of environmental action, recognising that big can be not just beautiful but crucial if we hope to avert the worst.

Susan George, in Beyond Growth, New Scientist, 18 October 2008.

than anything else here. Big fish, of course, once ruled the oceans. Columbus reported on 800- pound groupers in the Caribbean and 1000-pound green turtles, so thick in the water his ships nearly ran aground on them. Even two centuries ago, ships would collide with whole schools of whales.

In the absence of humans, would the land return to its pristine state as in Bialowieza Puszcza, and would big fish and sharks once again dominate the seas?

Weisman travels the world to visit places formerly inhabited but now abandoned such as Chernobyl, the seaside resort of Varosha in Cyprus, and to the DMZ separating North and South Korea. In Varosha, abandoned in 1974 after the war with Turkey, trees grow through the roofs of houses, and hotels that lined the waterfront are in a state of non-salvageable repair. Lizards and whip snakes 'skitter through stands of wild asparagus, prickly pear and six foot grasses'. Nature is indeed reclaiming the land.

In Chernobyl, where humans remain excluded from the Zone of Alienation, the 30-kilometre radius evacuated circle around the plant, birds were back within a year of the 1986 explosion. After seven years, birds and rodents were nesting in the concrete shell of the reactor. By the early 1990s, the forests that survived the blast were filled with radioactive roe deer and wild boars, then moose, lynx and boars. Life goes on, Weisman writes, 'but the baseline has changed'. Some swallows hatch with albino feathers. They behave normally and then migrate. But the ones with white feathers do not return. Were they too genetically deficient to make the round trip to southern Africa, too unappealing to potential mates, or too noticeable to predators?

Perhaps this is the metaphor for the world without us – it will return to wilderness but with the baseline changed. Too many animals, particularly birds, have become extinct due to human action. The Earth simply cannot return to what it was once. Here Weisman barely suppresses his rage as he describes the extinction of the American passenger pigeon – dusky blue, rose breasted, and apparently

delicious. 'Its flocks, 300 miles long and numbering in the billions, spanned horizons fore and aft, actually darkening the sky.' A combination of destruction of their natural habitat for farming, and the effect of shotguns, meant that by 1900 they were gone from the wild and by 1914 extinct. Just like the New Zealand moa, the Mauritius dodo and the Hawaiian moa-nalo. Will the 1000 last remaining black-faced spoonbills, nesting on an island at the western end of the Korean DMZ, go the same way if hungry North Koreans keep swimming across to poach the eggs?

If humans left the Earth, what would be our legacy? Most enduring would be ceramic pottery, bronze statues and the quadrillions of two millimetre cylindrical nurdles that are the raw materials of plastic production. Heavy metals, many toxic, can hang on for a long time in farming soils (lead 35,000 years, chromium 70,000 years). But all those are but an instant compared to Uranium 235 and 238.

Weisman is too much of a humanist to really want to see the demise of the human race, instant or otherwise. He cites the Masai herdsman of Amboseli National Park in Kenya who live in carefully managed harmony with predators and grazers alike.

So what to do? How do we keep humans on Earth without their destroying it? The answer lies in numbers: they have to be reduced. A universal one-child policy would get numbers down to 1.6 billion by 2100. With such far-more-manageable numbers, 'we would have all the benefit of

our progress plus the wisdom to keep it under control.'

Read this book. I hope it becomes a classic.

Jenny Goldie

Cecil's despatch of business was extraordinary, his maxim being, 'The shortest way to do many things is to do only one thing at once.'

Samuel Smiles (1812-1904), *Self-Help*

The four laws of ecology:

1. Everything is Connected to Everything Else. There is one ecosphere for all living organisms and what affects one, affects all.

2. Everything Must Go Somewhere. There is no "waste" in nature and there is no "away" to which things can be thrown.

3. Nature Knows Best. Humankind has fashioned technology to improve upon nature, but such change in a natural system is, says Commoner, "likely to be detrimental to that system."

4. There Is No Such Thing as a Free Lunch. Everything comes from something. There no such thing as spontaneous existence.

*Barry Commoner,
in The Closing Circle, 1971*

Book review

Play as if your life depends on it

by Frank Forencich,

Published by GoAnimal, Seattle 2003

Health is rarely absent from the media, politics or economics. Yet when we look more closely at the substance, we see that the controversies generally focus on treating illness and injury and paying for those treatments. Good health receives surprisingly little serious attention in the media who treat it as a lifestyle option. Good health, most likely exceptionally good health and extraordinary fitness, must have characterised the ancestors of everyone reading these words. Today we have departments in every university training health workers and researching disease treatments, we devote a substantial proportion of our national and personal budgets to 'health', yet with all our science and all these dollars, health is declining in substantial proportions of our population. In the US it is now expected that the current generation of young people will not live as long as their parents.

This book takes a refreshing, even subversive, look at human health and wellbeing in an explicitly evolutionary context. It is an application of Ockham's Razor to our physical and mental health and wellbeing today. The author, Frank Forencich makes the point, familiar to readers of this journal, that "human physiology and biomechanics have been sculpted over the course of millions of years to enhance our survival in a semi-wooded grassland environment". In the next three hundred pages he explains how we can all mimic those challenges to improve our health, fitness and overall wellbeing. Although this book follows in the tradition of *The Paleolithic Prescription*¹, *Neanderthin*² and *The TBK Fitness Program*³, it actually breaks significant new ground, shifting the focus from reductionist physiology to how we can each apply the principles of evolutionary health to our everyday lives – not just our bodies – through to old age and really enjoy ourselves in the process.

The author acknowledges the unconventional nature of his recommendations: "When our world becomes automated and sedentary living becomes the norm,

deviance becomes a prerequisite for health. If you want to be vigorous and fit, you're going to have to behave differently from the people around you". He points us out of the gym, out of the special sports 'gear', away from dependence on specialist advice and the expenditure of money. He calls on us to distinguish fitness from sport and shows us how to enter the minds, lifeways and environment of our evolutionary past. "We are animals and it's about time we got good at it". He says "we shouldn't worry about what other people think; if they won't exercise in public, they're the ones who are dysfunctional, not us." He even has a new twist to the customary warning on health and fitness books: "Before beginning a program of physical inactivity, consult your physician."

Reading this book I was reminded of the time a personal trainer introduced a bewildered new client to the vast range of specialised equipment at my gym. "Where do I begin?" she pleaded. Meanwhile, her four-year-old daughter was scampering from one piece of equipment to the next, trying them all out in her own way, clambering over them, swinging from them and ignoring those that offered no immediate challenge. She knew exactly what to do: accept the new challenges and have fun, without permission or guidance.

Humans are 10,000 times more common than we should be, according to the rules of the animal kingdom, and we have agriculture to thank for that. Without farming, the world population would probably have reached half a million by now – about the size of the population of Glasgow.

*Professor Steve Jones in his lecture
Is Human Evolution Over?
7 October 2008*

Forencich contrasts his approach to conventional fitness publications. Whereas they often seriously describe some variation of the 'three pillars of fitness' such as aerobic capacity, strength and flexibility, Forencich considers the environment and culture in which we live, and recommends our three pillars of fitness be "mischief, deviance and rebellion".

Forencich has discovered – independently – the Evolutionary Health Principle*. We are essentially hard-wired from millions of years of survival struggles on the savannah to prefer physical rest and even idleness and this preference has driven the

* Stephen Boyden has defined the Evolutionary Health Principle as: The principle that, if an animal is removed from its natural environment, or if the environment changes in some way, then it is likely that the animal will be less well-adapted to the new conditions, and will consequently show some signs of physiological or behavioural maladjustment.

development of labour-saving devices, our transport infrastructure and much else so that the ancestral imperative for movement has all but disappeared as we set up our modern world to give us conveniently what we want. It becomes obvious that to move in ways that are best for our health, we're going to have to do things that feel wrong. We're going to have to go against our hard wiring. It's no wonder we ignore those who advise us to be more active.

As well as physical fitness, Forencich deals with mental health and the individual's social health, not as separate topics but as interdependent. He sees as suggestive the correlation between the rise of depression and the decline in physical activity over the last hundred years: "Take any animal, restrict its normal movement to a small fraction of its biological norm and you're bound to see changes in its brain chemistry, disposition, outlook and other health consequences".

In this review I have concentrated so far on the arguments and the overall message of the book. The author does, however, also provide over a hundred examples of movements and routines, but we can sense that he feels his guidance should become redundant once we have the right mindset and can take up the abundant opportunities for physical challenges to meet our needs and ambitions. He also provides many examples of how to acquire the right mindset. Forencich reminds us continually of the animal model: animals do not 'work out'; they play, hunt and flee, but exercise – never.

Although this book sets out a range of movements that have likely relevance to human evolution and points to activity that mimics physical challenges that our bodies adapted to over millions of years, the writer advocates exercise that suits the needs of each individual, not the needs of a testosterone-charged hunter in the prime of life. He does this by focusing on functional exercise. He tells us that if your aim is to be fit enough to play with your grandchildren, go swimming in the sea every summer or enjoy without injury all the work you want to do in the garden, then that also points to the sort of training you need to explore. He even lays out the basics for an entire 'garden fitness' exercise program. He refers to this as 'functional fitness' and explains that just as this sort of activity does not involve the use of machines in a gym, so neither

As Sahlins pointed out, the more complex societies become, the less they are able to cope with challenges. The central concern of any state is to preserve predictability; as this capacity visibly fails, so does that state's chances of survival. When the promise of security wanes, so does the last real support.

John Zerzan, Twilight of the machines (2008) p 116 on our desire for predictability in an uncertain world

need preparing the body to undertake these activities. "Train for the way you want to live" is his advice.

Forencich devotes a chapter to walking, describing deliciously our ancestors' uses of walking on the African savannah and in the forest edge and how walking was the key to survival as the seasons changed. "If you wanted to eat, you'd have to put in some miles". He describes a 'stealth walk', a 'hunted gatherer walk', about walking with alertness and sharp observation and about creative running. He also points out that the natural state of the human foot is shoeless and that the natural environment is uneven rather than paved and explores the implications for our walking, running and overall fitness.

From walking, it is natural to move on to balance and

Forencich explains more clearly than I have seen elsewhere the mysteries of proprioception. Well, there are no mysteries after reading his explanation and we realise just how important it is and how to foster our proprioceptive skills. The author also takes us through warming up, stretching, 'sets and reps', 'correct form', injury prevention and diet – all firmly in their evolutionary context, often relishing his Occam's Razor conclusions that cut across the

conventional wisdom of the fitness professional and the health industry. His holistic approach comes out where he describes his game 'carnivore', a mixture of what I knew in my childhood as 'chasey' and 'hidey', modified to enhance its Palaeolithic reality – a game that he suggests can be combined with learning about grassland ecology, biology, animal behaviour and human origins.

For those interested in the fitness levels of our ancestors, Forencich leads us into an examination of the fossil record, describing, for example, skeletons of Neanderthals and early Homo sapiens with right side humerus (upper arm) bones that are significantly larger than the left side, suggesting powerful frequent movement of the right arm – similar to what we see in modern tennis players. There is also evidence from the points at which the tendons attach to the bones that indicate greater strength than almost any modern humans.

What is the thread running through the book? Frank Forencich returns time and again to the need for

adults to regain the joy and elation they had for physical movement in their childhood, a delight that adult hunter-gatherers retained in their exhausting corroborees, other dances, wrestling contests, jousting with children. He epitomises this as play. Play is movement that is voluntary, enjoyable, often companionable, unpredictable, fun and a little bit risky. Because play is subjective, it can't be measured or analysed; there are no stats or spreadsheets, no rankings, winners or losers. Play does not fit in with our cultural preference for dominance hierarchies. Fun is in the body and spirit of the player, not in the eyes of judges, commentators or spectators. All Forencich's movement recommendations are directed to help us progress beyond the contemporary idea of exercise as an onerous duty that is good for health or as a penance that must be endured to lose excess body fat – which will, of course, achieve both of these and itself give us the motivation to show up and get moving. In doing this, he acknowledges the need for imagination and willingness to be trailblazers and to develop play forms that meet our adult functional needs, and for this Forencich gives abundant help.

So here's a book that is not about fleeing from body fat, old age, diabetes or heart disease but is instead about running towards agility, strength, endurance, vitality, competence and new possibilities for play.

As a reviewer who has been participating in the development of 'Evolutionary Fitness' for the past five years, I found it hard to fault this book. Although the author deals with the science, he does not get lost in reductionism; he always keeps in mind the principle that what worked for three million years will still work today. The omissions I noted are (i) his relative neglect of a Paleolithic diet as described recently by Stephen Boyden⁴, but Loren Cordain⁵ and other writers have already covered that field adequately; (ii) the destruction of the Pleistocene environment and expansion of human numbers such that re-creation of the Paleolithic lifestyle requires more than a new approach to movement; (iii) the limited (though still useful) analysis of human social developments associated with civilisation and the supporting memes. Forencich's writing is never boring and, particularly in his final chapters where

he draws the threads together and lays out the path for us, is lyrical and inspiring.

The book is readily purchased through Amazon or the author's website: www.goanimal.com.

References

1. Eaton, S B, Shostak, M and Konner, M, *The Paleolithic Prescription*, 1988
2. Audette, R, *Neanderthin*, 1999 Visit Ray Audette's site
3. Katz, T B, *The TBK Fitness Program*, 2003 Visit Tamir Katz's site
4. Boyden, S V, *The Biology of Civilisation*, 2004
5. Cordain, L, *The Paleo Diet*, 2002

Keith Thomas

Keith will be discuss the ideas covered in this review at the NSF members' meeting on Tuesday 9 December. See page 3.

The one piece of advice you will not see on a government list is "buy less stuff". Buying an energy-efficient TV is to be applauded; not buying one at all is a crime against society. Agreeing reluctantly to advertising standards is the sign of a mature society; banning advertising altogether (even to children) is condemned as "culture jamming". Consuming less may be the single biggest thing you can do to save carbon emissions, and yet no one dares mention it. Because if we did, it would threaten economic growth, the very thing that is causing the problem in the first place.

*Tim Jackson, in 'Beyond Growth',
New Scientist, 18 October 2008*

Ladies and gentlemen, this is your captain speaking.

May I have your full attention please while I describe some of the features of this spaceship which will be carrying you well into the future.

We welcome you aboard this flight to Nirvana, but we should warn you before take-off about excess baggage and the possibilities of exponential growth. We have over six billion passengers aboard at take-off and, by the time we reach our destination, we may well have

closer to seven, so *please* take a moment to read the instructions for appropriate behaviour on the card in the pocket in front of you.

We are powered by several superbly engineered Rolls Royce engines – the very best in the world. We previously had American Pratt and Whitney engines with plenty of blast, but unfortunately they fell off the wings and went broke in 2008. Our new engines enable us to travel at supersonic speed so that you can arrive at your destination virtually before you have started. This will, of course, help to offset all your excessive CEO salaries.

However, you may experience a little difficulty in breathing as these hi-tech engines consume excessive amounts of oxygen and convert it into carbon dioxide and other unfriendly gases. You

should have no cause for concern, as these gases are invisible and our highly trained cabin crew will be serving you placebos as you sit comfortably in your upright, ergonomically designed posture capsule with a safety belt tested to resist the breaking strain of an obese passenger at several G forces.

In the inconceivable event of your experiencing a choking sensation, you should have no cause for alarm. An oxygen mask, will drop down from the bulkhead above you, and with superb, facially contoured ergonomics enable you to breathe deeply for at least five minutes before unconsciousness.

When we reach our cruising altitude above the smog of the industry that made this complex spaceship we will have smooth conditions for at least the next two and a half minutes.

The weather forecast from CSIRO tells us, however, that we can expect turbulence ahead from severe weather. But don't worry, my co-pilot is of the opinion that there won't be any rain – just hail, so those with tiled roofs on their houses will experience only a tenfold increase in their house insurance premiums.

We have been advised by navigational control to detour around the storm clouds ahead to avoid severe buffeting, but unfortunately our economic advisors said that we couldn't afford to fill all our fuel tanks before blast-off due to an unexpected peak oil downturn. However, you should have absolutely no cause for concern: our Company Chairman, and your crew are fully conversant with political survival techniques and under your seats you will find your own individually wrapped set of emergency pedals cunningly designed as exercise equipment. If you wish to avoid DVT (Depressive Vertigo Transition) we strongly advise you to rotate the pedals as fast as you can to the hypnotic politicised music of Midnight Oil that you can hear through the complimentary headsets you will find in the pocket in front of you.

Your pedaling will provide enough partially-renewable energy to at least keep the engines ticking over in recessive mode. This is called Greenwash DIY (Energy Generation) and is freely available from all our associated companies under the Low Hanging Fruit Technology label (with integral anaesthetic qualities). Any surplus energy you generate from your GDIY(EG) is carefully consumed under our new Feed In Tariff scheme, which means that you can collect 3.88 times the current rate when, and if, you reach the Nirvana terminus. Unfortunately, that applies only to those of you living in the ACT. Please note your kilowatt-hour generation and register it

with our cabin staff so that they can credit it to your account.

If you look out of your window on the right hand side of our spaceship you will notice signs of 'bell-wether affluenza' as we fly over the suburbs of our turn of the century society. Most of those bluish rectangles in the back gardens are now unfortunately stagnant and generating methane as only the wealthiest owners could afford to pay for water and electricity to keep them clean. Those of you on the left hand side will now be able to see a faint and rather wobbly brown line that used to be called the Murray-Darling Basin System. We regret our inability today to serve you any fruit juice, tea or coffee - for some odd reason our caterers were not answering the phone when we rang them before blast-off.

You will also see that most of the houses have dark coloured roofs because an enthusiastic salesman in the Naughty Nineties thought it would be a good sales incentive. It transpired later that he had shares in the air conditioning business, but nobody made the connection. Neither did they think about where all the electricity was going to come from nor realised there would be resulting pollution from the coal fired power stations and, as all the NIMBY families had protested against the idea of wind farms in their paddocks, the blackouts grew longer and more frequent. Sad, really.

Ladies and gentlemen, we are losing altitude - oops - beginning our descent to Nirvana, so please pedal a bit faster.

We would have looked forward to having you fly with us on your return trip but, as you did not appear to heed my earlier warning about Appropriate Behaviour, we regret that the extra weight has forced us to say that this is a One Way flight. It was also most unfortunate that, due to a top management lack of understanding of the fundamental need for renewable fuels, they accepted the advice of their economic rationalists and cut back their R & D budget. (Qantum Airlines similarly forgot that U was also an important factor in business success).

We hope that you enjoyed your flight with us today. Our recently retired CEO sends the very best of British luck and asked me to tell you that our spaceship has the very best workmanship there was at the time, but unfortunately there was an industrial disagreement with our union about R & D, overseas maintenance and CEO salaries. He suggests that you pedal faster ... faster ... faster ... and perhaps flap your arms.

Derek Wrigley

Farrago

Pet food politics

Pet Food Politics is the title of a book by Marion Nestle reviewed in *New Scientist*, 30 August 2008. The book's subtitle is *The Chihuahua in the coal mine*. Its topic is the Chinese pet food scandal in 2007, when an unknown number of pets in the USA died after eating imported pet food containing wheat gluten spiked with melamine. The nitrogen-rich molecule had been added to the gluten to boost the apparent protein content.

The author had concluded that 'contaminated pet foods were early warnings of the safety hazards of globalization'. The reviewer wrote that the case did not justify the broader agenda of the author.

Interestingly the review appeared round about the time a similar scandal broke, this time with human babies the victims of melamine spiking of milk products. Maybe the businessmen running the milk company did not know that the Chinese Government had executed a businessman involved in the pet food fraud.

Meanwhile Deakin University researchers tell us that pet cats are the world's greatest consumer of fish, despite the fact that fish is not a natural food for cats. Australian cats eat more fish than do Australian people, and each of these eat far more than all the world's seal species.

A similar effort (to that needed to win WWII) is required to fight environmental meltdown and it would be less difficult than it sounds. The political point is that ecological Keynesianism is a win-win scenario that would provide something for everyone. People are generally way ahead of governments in recognising danger, and they tend to build coalitions to convince politicians they will vote for whoever takes a specific crisis as seriously as they do. Politicians can win on a Keynesian environmental programme because now, as then, it promises a society of highly skilled, highly paid quality jobs and renewed export opportunities.

*Susan George, in 'Beyond Growth',
New Scientist, 18 October 2008*

Mercury poisoning

In 2000 Jane Hightower, a doctor in San Francisco, saw a number of patients who were complaining of fatigue, upset stomach, memory problems and difficulty in concentrating. She discovered that they all enjoyed eating large fish, such as tuna and swordfish. They were all suffering from mercury poisoning. She advised them to stop eating these fish, and soon their symptoms disappeared.

Hightower found that she could not get clear official guidance on mercury consumption. Investigating further she found evidence of corporate cover-ups, conflicting science and corrupt officials.

The doctor has written a book entitled *Diagnosis: Mercury: Money, politics and poison*, detailing her discoveries. She covers the history of mercury, infamous mass poisonings, and dodgy science.

Most of the mercury in our environment comes from coal-fired power plants, and it is delivered to us by fish. Commercially-funded research helps to account for the widely differing 'safe' levels offered by different organisations.

Tougher restrictions on mercury are needed, but they are not going to be agreed in the near future.

Debra Mackenzie, *New Scientist*, 4 October 2008

(The Australian government has decreed that we replace incandescent bulbs with mini-fluorescent lights. Yet these all contain mercury which is

increasingly contaminating landfill sites all around the country.)

Herbicide Resistance

'Roundup Ready' crops, genetically engineered to be resistant to glyphosate (marketed as Roundup) are the most commonly planted GM crops. Farmers who grow these crops tend to rely on just the one herbicide, but they are now being urged to use integrated weed management as cases of glyphosate-resistant weeds appear.

Australia had its first known outbreak of this resistance in 1996 near Echuca. The outbreak was brought under control, but without extensive monitoring of crops and early detection, outbreaks can spread rapidly, as weeds set seed and perpetuate the problem.

So far resistant populations of liverseed grass, barnyard grass and ryegrass have been discovered in Australia. Glyphosate resistance is becoming a hygiene and quarantine issue. Resistance against other herbicides is also appearing, with the discovery in northern NSW of a population of barnyard grass resistant to atrazine.

Australasian Science, October 2008

Lemmings

Norwegian lemmings, hamster-like rodents, are famous in folklore for their apparent mass suicides, leaping off cliffs into the sea. In reality the massed migration of lemmings, which used to occur every three to five years, were the result of population explosions when breeding conditions were particularly favourable. Frantic mobs of the animals searching for food did occasionally dash over cliffs.

There have been no leaping lemmings since 1994, and investigators have decided that global warming is to blame. Lemmings do not burrow. They live in a narrow gap between the snow and the earth where warmth from the earth has melted the snow, but left a roof of fluffy snow. There they can live, safe from predators, and with moss to eat.

Global warming has shortened the period in which lemmings can live in this safe haven. Accelerated melting and refreezing has also changed the conditions. There is not such good insulation against the cold, and a layer of impenetrable ice often covers the moss. The resulting population decline is forcing snowy owls and foxes, the main predators on lemmings, to turn to other prey, with flow-on effects through the ecosystem.

The Canberra Times, 8 November 2008

Sugarcane cartons

Around the world billions of tonnes of plastic-coated waxed paper products fill up landfill sites. Researchers at the Cooperative Research Centre for Sugarcane Innovation through Biotechnology believe they could provide a biodegradable alternative to this paper, using sugarcane waste.

Lignin, an integral component of plant cell walls, is strongly hydrophobic. Drs Les Edye and Bill Doherty say it is possible to change the surface properties of cardboard and paper so the lignin fibres stick to the surface. Alternatively the lignin can be altered so that heat will fix it to the surface. In either case good waterproof containers could be made from the material.

If the stocks of sugarcane waste are insufficient to meet demand, the process could be adapted to treat

wheat straw and banana waste. As fungi have perfected ways to break down lignin they will have no difficulty in biodegrading used food and drink containers made from these materials.

Australasian Science, October 2008

Only ten weeks to Christmas! I've told my lot not to get anything for me: I've got everything I need. And it's no good getting anything for the grandkids. They have so many expensive things, mobile phones and such and they want more. They wouldn't like anything I could give them.

Overheard on the bus, October 2008

Seasons greetings to all our members from the NSF board, Jenny and Keith.

What we need

We need an *emergency, nation-building response to place the economy on a low-carbon footing, minimising the consumption of oil.*

The components would begin with:

- a major focus on energy conservation and efficiency
- large scale conversion to renewable energy
- major investment in efficient public transport, rail, bus, cycling; immediate halt to investment in freeway and airport expansion
- rapid phase-out of high carbon emission facilities such as coal-fired power unless safe carbon-capture and storage can be introduced within ten years
- urgent introduction of high-speed broadband to minimise travel and improve communication efficiency
- continued investment in low-emission technology
- rapid reform of the tax system to remove perverse incentives that encourage oil use, carbon emissions.

Ian Dunlop, formerly an executive in the global coal and oil industries, but now an independent energy analyst and deputy convenor of the Australian Association for the Study of Peak Oil, writing in *Australasian Science*, September 2008



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 18 January 2009.

Contributions may be sent on paper or electronically. This journal was prepared using Microsoft Word and PageMaker 7.0.2.

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.

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.

Nature and Society Forum's major projects

ANSI: The Australian National Sustainability Initiative is endeavouring to establish a working display site in Canberra that addresses all aspects of sustainable building and lifestyle. Contact Wendy Rainbird

Biosphere Reserve Nomination: supporting the nomination of the ACT as a UNESCO Biosphere Reserve, part of UNESCO's Man and the Biosphere program. Contact Ian Anderson

Biosensitive Futures: interactive website launched this year provides authoritative information on social and environmental issues for public discussion. Also kits on the same lines for use in discussion groups. Contact Stephen Boyden. Visit www.biosensitivefutures.org

SEE-Change: community-based discussion and action groups to encourage local involvement in sustainability activities. Contact Bob Douglas

Social learning workshops for sustainability: a number of groups focusing on different aspects of local sustainability, including art and transport, youth film makers, local communities. Contact Valerie Brown

Solar Planning and Housing: extending knowledge of how to build or retrofit houses to use less water and fossil fuel energy while enhancing liveability. Contact Derek Wrigley

All contacts can be reached through the NSF office.

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

Payment: Cheque

Or Visa Mastercard

Expiry date: Cardholder:

Signature:

Annual membership \$55 per person

Concession \$22 per person

(Students, govt pensioners)

Life membership \$550 per person

Corporate membership \$110

Name:

Address:

.....

..... Postcode:

E-mail:

Telephone:

Date:

Please send completed form and payment to Nature and Society Forum

GPO Box 11, Canberra, ACT 2601 or fax with credit card details to (02) 6125 1756