

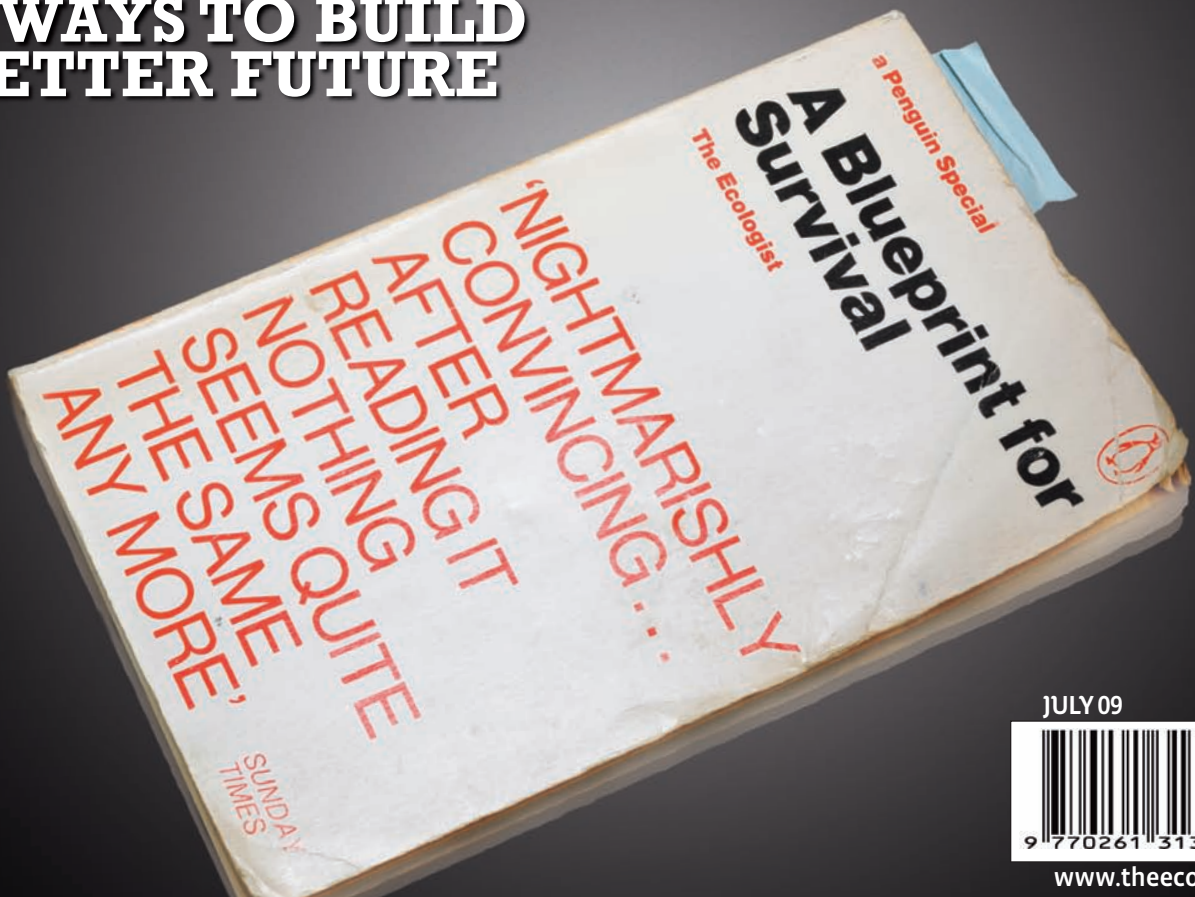
ECOLOGIST

THE WORLD'S LEADING ENVIRONMENTAL MAGAZINE

JULY 2009

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The energy crisis

In his letter to the founder of Alcoholic's Anonymous, in 1961, the psychoanalyst Carl Jung noted that the addiction was, at a very deep level, a 'spiritual thirst of our being for wholeness'. Instead of internalising the search, experiencing it for ourselves, however, the alcoholic looks to the spirit in the bottle to fill the void.

All of our addictions – to alcohol, drugs, food, oil, consumer goods, money, faster modes of transport, building a better anything through genetic engineering, religious fundamentalism and even the thrill of war – come down to this same desire: to fuel the spirit, to be in touch with the source, to be moved by the power of it out of our mundane selves and into a higher realm. To feel powerful.

Our search for energy is another addiction. We want more of it, and we want it to be abundant, limitless, renewable, but most of all cheap. As a metaphor for a culture on its last legs, the current energy crises – the profound lack of resources, personal and earthly, that we face when we dare to peer into the future – could not be more apt. If we are going to have a proper energy revolution, maybe it needs to begin on the inside (see page 34).

Energy has been at the root of everything the *Ecologist* has written about for the past 40 years. Not just the crude energy that we use to fuel society, but human energy as thought, as fuel, as an organising and motivating principle in our lives. All the complex arguments we make come down to one thing: how well, how positively, we use and manage this elusive, many-faceted and dwindling resource.

When you buy wholesale into the metaphor of the energy crisis, however, beware: you may be buying in to some parts of the story without focusing properly on others. For instance, placing more emphasis on the role of the consumer and focusing on the simple things we can all do to save energy can obscure the role of government and industry in the development of policies that limit high petroleum consumption, dependency on imports and polluting non-renewable fuels.

Many of the groups highlighted in this month's cover feature (page 14) campaign for more of the 'energy' burden to be put on government and industry, and less on citizens. This doesn't mean citizens can abdicate responsibility, but before we all begin to suffer from '10 things we can do (or buy) to save the planet' burnout, let's step out of the addiction/denial cycle long enough to ensure that government and industry are held accountable for responding to the current crisis in a way that counts.

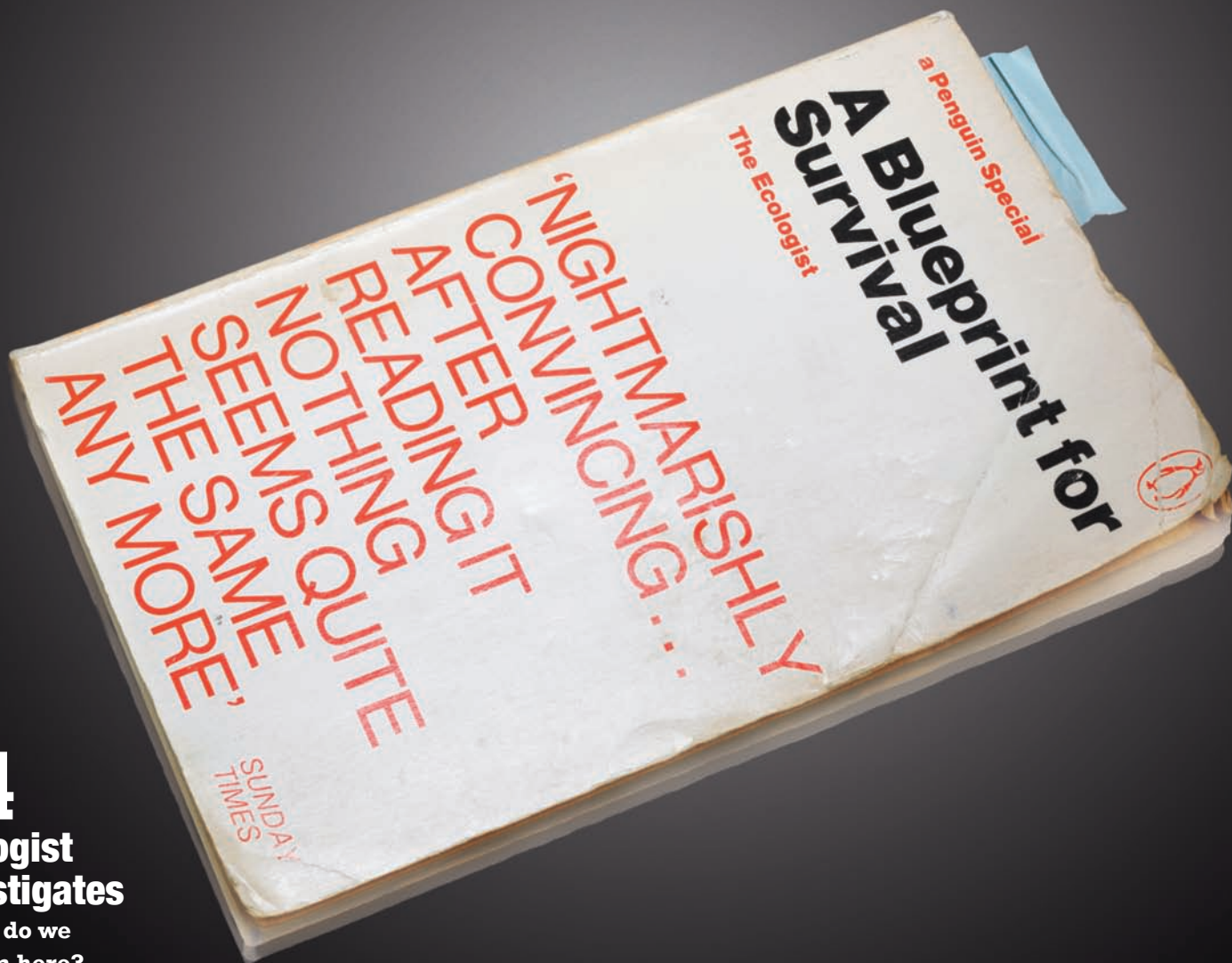
From this month, the *Ecologist* enters a new era. It relaunches as a completely updated and enhanced website – and I take my leave as Editor.

Directing more energy into the worldwide web – as our director Zac Goldsmith explains on page 27 – will allow us to respond more quickly to a rapidly changing world. As he says: 'The format will change, of course, but we won't lose anything that has made the *Ecologist* vital and relevant. We will continue to provide the best analysis and the best investigations. We will continue to provoke, fearlessly, wherever that's needed.'

As the *Ecologist* moves online, the loyalty and participation of our readers is, as always, greatly appreciated. We hope that you will continue to subscribe and make good use of the new website, which will eventually include our entire archive dating back to 1970, and which will bring you up-to-date news daily, and opinion from campaigners and thought leaders, as well as bringing you many of the same regular features you enjoyed in the magazine, including our in-depth investigations. We look forward to seeing you there.



It's not just the crude energy we use to fuel society, but human energy as thought, as fuel, as an organising and motivating principle in our lives



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COVER PHOTOGRAPH: ARTHUR WOODCROFT

THE ECOLOGIST ONLINE

www.theecologist.org

Smell the flowers?

An increase in air pollution is destroying floral aromas, according to new research, meaning pollinators such as bees and butterflies – whose populations are already in decline – may soon be struggling find pollen sources

A new study by the University of Virginia has indicated that increased levels of air pollution are destroying the aroma of flowering plants, impairing the ability of pollinators to locate them. The study, published in the journal *Atmospheric Environment*, indicates that aroma from flowers has decreased by as much as 90 per cent from pre-industrial times.

Coming on the back of other reports showing falling bee and butterfly populations, the study compared how far scent molecules – known as floral hydrocarbons – travel in areas of low pollution compared to areas of high pollution.

'The scent molecules produced by flowers in a less polluted environment... could travel for roughly 1,000m to 1,200m; but in today's polluted environment... they may travel only 200m to 300m,' explained environmental sciences professor and co-author of the paper, Jose D. Fuentes.

The research shows that due to the volatile nature of floral hydrocarbons they bond easily with airborne pollutants. The chemical reaction that follows destroys the scents produced by the hydrocarbons, resulting in molecules that no longer smell of flowers.

Because of this, bees and other pollinators that rely on scent trails to locate plants are increasingly forced to rely more heavily on sight. The result is a vicious cycle whereby pollinator populations decline as they struggle to find food, and flowering plants become scarcer as they are not pollinated sufficiently to proliferate.

The research is made all the more alarming as the season of peak air pollution in the summer months is also when demand on pollinators is at its height.



NEWS ROUNDUP

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ON THE WEB

Some of the key environmental stories from the past month that you may have missed. Visit the new website to read and follow-up...

- » 'Green seniors' ask to be trained as volunteer environmental advisers for their local areas, and call for 'age-proof' green strategies
- » Huge quantities of lost fishing gear are wreaking havoc in the marine environment, says report by UNEP
- » Government commits to a smart-meter programme, but will the data be secure, and will householders be interested enough to use them?
- » The Finnish Olkiluoto nuclear reactor – the same model as those to be built in the UK – may be scrapped because of official safety fears
- » Vattenfall and Shell top this year's climate greenwash awards, taking nearly 60 per cent of all online votes
- » Overfishing sends the ecosystem of the Cape Gannet haywire, as pelicans, gulls and seals turn on the birds' chicks
- » Husband of US swine flu victim seeks information from Smithfield Foods pig farmers, with a view to legal action
- » Draining rice paddies just once a season could cut their methane emissions by 30 per cent, experts say

NEWSLETTER

See www.theecologist.org

- » **Make sure you've signed up to our e-newsletter to keep track of the exciting new developments at www.theecologist.org**

Could Borneo beat palm oil?

Land victory will allow Borneo's indian tribes to fight logging and palm oil industries, while report shows use of certified sustainable palm oil at a mere one per cent since 2008

Good news from the Federal Court in Malaysia – a decision made on 8 May could allow Borneo tribes to stake claim to lands they use for hunting and gathering, in addition to land they have cultivated for farming, to which they are already entitled.

In what NGO Survival International has described as a 'landmark ruling', the court ruled that indigenous people in Sarawak, in the north-west of Borneo, had legal rights to traditional land even if it had never been cultivated – opening up the possibility that the native Penan tribes could fight logging and palm oil operations in the area.

In the past, the Sarawak state government has leased tribal land to industries without consulting its people.

But there are worries that such measures will not stem the rising demand for palm oil, a progressively more lucrative product.

Just days after the Malaysian court ruling, British companies W4B and Vogen Energy confirmed plans to fuel their new biofuel power plants – in Portland, Dorset, and Newport, South Wales, respectively – with imported palm oil.

The two companies say that they will only use oil accredited by the Roundtable on Sustainable Palm Oil (RSPO). However pressure group Biofuelswatch believes that using palm oil to fuel power stations would create extra demand that could still increase deforestation.

A further blow to the notion of 'sustainable' palm oil was dealt with the publication of a



Palm oil is refined from palm nuts. Only one per cent of RSPO certified sustainable palm oil has been bought since it became available in 2008

report by WWF in May, which showed that only one per cent of the palm oil certified by RSPO has been purchased since it became available in November 2008.

The oil carries an 8-15 per cent price premium over uncertified oil, but WWF also blamed a lack of interest among the bulk buyers.

'This sluggish demand from palm oil buyers, such as supermarkets, food and cosmetic manufacturers, could undermine the success of sustainability efforts, and threatens the remaining natural tropical forests of southeast Asia, as well as other forests where palm oil is set to expand, such as the Amazon,' said vice-president of agriculture for WWF, David McLaughlin.

The environmental group is now threatening to run a 'naming and shaming' campaign, drawing attention to those companies that are failing to support the initiative.

Greenpeace has slammed the RSPO initiative for allowing its members to continue destroying forests and peatlands.

Environment secretary Hilary Benn has said the Government is 'greatly concerned' by the potential environmental impacts of palm oil production.

PHOTOGRAPH: GETTY IMAGES

UN's 'welcome shift' in food policy

Environmental groups have reacted with surprise to statements made by UN special rapporteur on the right to food, Olivier De Schutter, during the 17th session of the Commission on Sustainable Development of the United Nations in New York.

De Schutter said that increasing agricultural production 'must go hand-in-hand with increasing the incomes of the poorest, particularly small-scale farmers'. He also encouraged a switch to more sustainable modes of agriculture, 'which do not contribute to climate change', and called for a model that instead of trying to 'feed the world' would 'help the world feed itself'.

Friends of the Earth International and global peasant movement La Via Campesina welcomed the statements, describing them as 'a welcome shift' in the UN's conventional attitude to food sovereignty.

In his address to the Commission, De

Schutter said that investment in agriculture in the less-industrialised world needed serious thought to ensure it prioritised those most in need.

'The experience gained from the [food] crisis showed that the key question is not merely that of increasing budgets allocated to agriculture, but rather that of choosing from different models of agricultural development which may have different impacts and benefit various groups differently,' he said.

Both FoE and Via Campesina welcomed a renewed focus on the UN Declaration of the Rights of Indigenous Peoples in the Commission's final report, which also promised to encourage the development of 'locally appropriate farming systems and agricultural practices'.

However the campaign groups were keen to go further, calling for radical

reform of the Bretton Woods institutions.

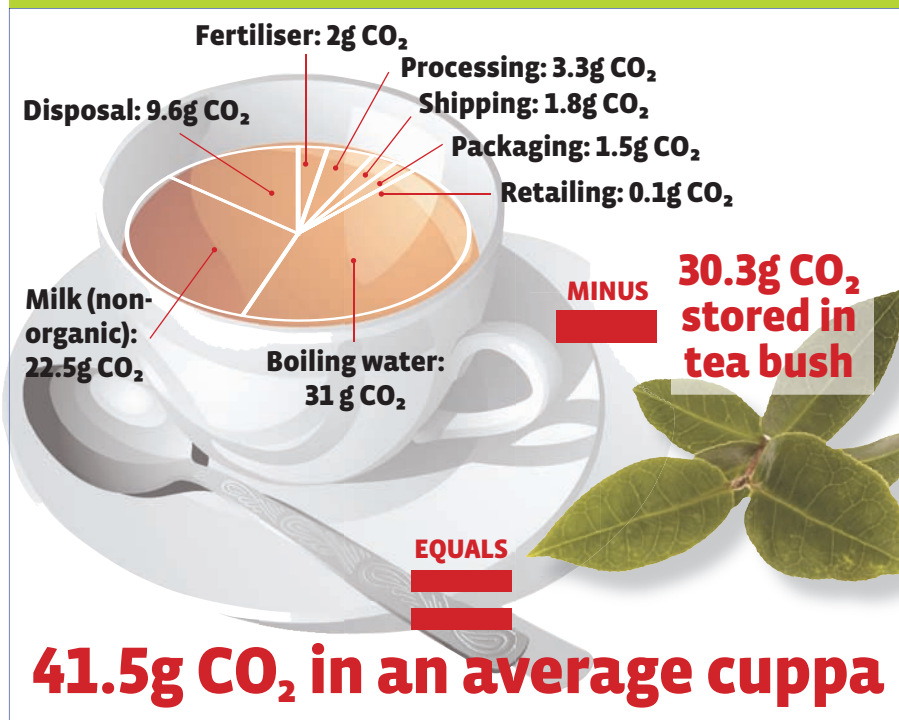
'There is a need to unmask and resist the false promoters of models to block the right to food and food sovereignty, like the World Bank, the International Monetary Fund and the World Trade Organization,' FoE and Via Campesina said in a joint statement. 'Their policies have led us to the current crisis, and these actors should not be part of the "international community" looking for solutions.'

Meanwhile, Japan is said to be leading a campaign with the G8 to regulate increasing levels of 'land grabbing', where rich nations buy up tracts of fertile land in less-industrialised countries to boost their own food security.

According to the *Financial Times*, the proposals include a call for increased transparency in the investment deals, respect for existing land rights, better sharing of benefits, and commitments to environmental standards.

Seven per cent – the amount of global electricity that could be supplied by concentrating solar power stations in 2030, according to a report by Greenpeace, the European Solar Thermal Electricity Association and IEA SolarPACES.

CARBON EMISSIONS FROM A CUP OF TEA (GRAMS)



Source: Details supplied by Nigel Melican, CEO Teacraft Ltd, www.teacraft.com

IN BRIEF

Indigenous insurrection

Amazon indians have called for an insurrection against the Peruvian government, whose authority they say they no longer recognise. The call was in response to military mobilisation to suppress protests and the suspension of civil liberties for two months. Protesters from 65 indigenous tribes had blocked roads and waterways, preventing 40 ships from loading goods for export and causing oil exports to fall by more than half. The dispute centres on a decision by the Peruvian government to allow international companies the use of 92,000 square kilometres of the indians' communal rainforest, in line with a free-trade agreement with the US. Indians claim this breaks an International Labour Organisation agreement that requires the government to consult with them about any development of their land. Their complaint is supported by a wide cross-section of social groups, including the International Federation of Human Rights, the Catholic church and the Peruvian ombudsman.

Toronto's green roofs

City legislators in Toronto, Canada, have taken a bold step by requiring half the surface area of all roofs on new large buildings to be seeded as green roofs. All blocks of flats higher than six storeys, schools, social housing, commercial and industrial buildings in the city will have to comply with the ruling, as well as some large private houses. Steven Peck, president of Green Roofs for Healthy Cities, said that the by-law 'breaks new ground' in best practice and was a brave stand against the lobbying efforts of developers.

Shopping is emotional

In a recession we all tighten our belts, right? Not necessarily, according to an academic at the University of Hertfordshire. In a survey of 700 women, Professor Karen Pine found that some women use shopping as an emotional regulator, or a way of 'anaesthetising' themselves against life's ups and downs, and 79 per cent would cheer themselves up with a spending spree. One in four experienced feelings of regret, guilt or shame after buying something in the week prior to the survey.

Sweeteners surviving water treatment

Researchers looking for a man-made contaminant that could be used to track wastewater flows in natural water-bodies have inadvertently discovered that large quantities of artificial sweeteners can survive the water treatment process and pollute ground- and surface-waters.

Writing in the journal *Environmental Science and Technology*, Ignaz Buerge and colleagues from the Swiss Federal Research Station, Agroscope, discovered that although saccharin and cyclamate (banned in the US but still available in Europe) were largely destroyed in water-treatment plants, acesulfame K and sucralose survived the process intact.

Acesulfame K was the only sweetener found in groundwater samples, but it was discovered at levels that surprised environmental scientists. '[The] concentrations are astronomically high,'

environmental chemist Bruce Brownawell from Stony Brook University in New York told Discovery News. 'If I had to guess, this is the highest concentration of a compound that goes through sewage treatment plants without being degraded.'

The effect of acesulfame on the marine environment is still not known. Elsewhere, marketeers behind the latest artificial sweetener, known as Stevia, are engaging in a hearts-and-minds campaign to dampen down any controversy over its introduction.

The company manufacturing Stevia, Pure Circle, has already made a \$25,000 donation to an NGO in Paraguay and is looking to build relationships with other NGOs in regions where the Stevia plant – from which the sweetener is derived – will be farmed.



Toxic insecticide carbofuran banned in US

Despite intense lobbying from the pesticide industry, the US Environmental Protection Agency has said it will go ahead with a ban on the highly toxic insecticide carbofuran.

The chemical, sold under the trade name Furadan by FMC Corporation, has had substantial documented effects on wild bird populations since its introduction in 1967.

In one staggering case in Linden, California, in 1990, the carcasses of 30 mourning doves, 100 American robins, 200 European starlings, red-winged blackbirds and grackles, and 700-800 goldfinches, sparrows and house finches were recovered from a field following an application of liquid carbofuran.

The American Bird Conservancy, one of the NGOs that has pushed for the ban, welcomed the decision as 'a huge victory for wildlife and the environment'. FMC Corporation plans to appeal the ruling.

The decision came as the UN followed through with a ban on the pesticide lindane as a persistent organic pollutant, under an international treaty known as the Stockholm Convention, although it drew back from levying a complete ban on DDT, the chemical highlighted by Rachel Carson in 1962 in her famous book, *Silent Spring*.



The highly toxic insecticide carbofuran has been banned in the US, though regulators still underestimate the risk posed by pesticides

Elsewhere, however, new studies have shown that regulators are still underestimating the risk posed by pesticides.

Research published in the journal *Environmental Science and Technology* in March showed that when official EU computer models are applied to the herbicide

metribuzin (known as Sencorex in the UK), the results vastly underestimate the concentrations of the chemical remaining in soils, where it can continue to degrade for five to six years.

More worryingly, a new analysis conducted by Professor Richard Sharpe of the Queen's Medical Research Institute in Edinburgh for the UK-based CHEMTrust indicates that exposure to common environmental pollutants 'probably accounts for a proportion' of male genital and reproductive abnormalities, such as undescended testes and low sperm counts.

Sharpe says that the most urgent issue still to be resolved is whether phthalate plastic-softening chemicals – the most common environmental pollutants – can cause male reproductive problems in humans, as they can in rats.

One week after the release of the CHEMTrust report, a US study that evaluated more than 1,300 mothers and fathers concluded that children whose parents use pesticides, herbicides or fungicides around the home are twice as likely to develop brain cancer than those whose homes are free of the substances. To read the study's abstract, visit <http://tinyurl.com/c3gwwb>

Peak oil: it's all downhill from here...

Put the date on your calendar: global oil supplies peaked in the first quarter of 2008.

That's not according to Greenpeace or Solar Century – it's the conclusion of a report by Raymond James & Associates, a sober-looking investment house based in Florida.

According to the *Wall Street Journal*, Raymond James believes that non-OPEC oil production peaked in the first quarter of 2007, with OPEC wells peaking a year later.

The analysts describe their conclusion as representing a 'paradigm shift of historic proportions'.

'Those declines had to have come for involuntary reasons such as the inherent geological limits of oil fields,' the report says. 'We believe that the oil market has already crossed over to the downward side of Hubbert's Peak.'

In the UK, researchers writing in the *International Journal of Oil, Gas and Coal*

Technology have published work suggesting that we may have already extracted much more oil than was previously thought.

An estimate in 2008 by chemists in Hungary suggested that since oil drilling began in 1850, humanity has pumped less than the 100 billion tonnes of crude oil.

But the new research by John Jones at the University of Aberdeen's School of Engineering suggests that this figure should actually be close to 135 billion tonnes. Jones, who argues that the total quantity of oil extracted has rarely been of interest to the industry, is calling for further work to clarify the figure.

The industry, however, is more excited about a new report in the journal *Science*, suggesting that a melting Arctic might give access to 83 billion barrels of undiscovered oil and 1,550 trillion cubic feet of natural gas – equivalent to three and 14 years of current global demand respectively.

Uzbek child labour

Child labour is still in routine use in the cotton fields of Uzbekistan, according to a new investigation by the Environmental Justice Foundation.

The former Soviet state maintains high government cotton-production quotas, which result in the conscription of large numbers of adults and children alike to work in the fields for two months a year.

The EJF report – 'Still in the Fields' – maintains that despite signing international agreements banning the use of child labour, the Uzbek government continues to put children as young as 10 in fields, with high daily quotas to fulfil and minimal wages. Children were found working in roughly 60 per cent of the fields visited by the campaign group.

Uzbekistan is the world's largest cotton exporter, and supplies manufacturers in Asia and cotton traders in Europe.

To read the full report, visit <http://tinyurl.com/lcv07d>

'The key to this plan is to take sustainable development beyond just environmental issues as we have defined them so far. It needs to become the number one principle of everything we do – the whole package, from health and education to transport and the economy.' Rhodri Morgan AM, First Minister for Wales, talks about his new environment policy at the Hay Festival in May

The great jatropha swindle

The use of the jatropha plant as a source of oil for biofuel has gone from environmental hero to zero in the space of some two years.

Originally hailed as a new, sustainable source of plant oils due to its ability to grow on marginal land unsuited to conventional agriculture, jatropha has since come under criticism as farmers discovered that it produces much higher yields in fertile soils better suited to food production.

Now a report by Friends of the Earth has confirmed that jatropha plantings are replacing food crops in Swaziland, where UK company D1 Oils has been promoting the crop to farmers.

The report reveals that growing jatropha on marginal land in the country is very unlikely to allow farmers to make a profit, and that growers have been forced to resort

to irrigation in the drought-struck region.

FoE also raises concerns that the farmers were unable to read or understand the contracts offered to them by D1 Oils.

'It is shameful this so-called "wonder crop" is replacing food production in a country where two-thirds of the population depend on food aid,' said Friends of the Earth biofuels campaigner Hannah Griffiths. 'D1 Oil's claims about jatropha don't marry-up with the experiences of the African farmers growing it.'

In a statement, D1 Oils conceded that the performance of jatropha crops had so far been 'disappointing', but said that FoE had used out-of-date or inaccurate data.

'We will make little progress in the field of renewable energy if we halt the development of potentially sustainable crops because of "unknown unknowns";' the company said.

Energy-saving on the rebound

Our attempts to reduce greenhouse gas emissions by using more efficient technology might be doomed to at least partial failure, say scientists.

The notion of the 'rebound effect', whereby more efficient products simply make it cheaper to use more energy, produce more goods, or generate spare cash to buy other products, was originally proposed in 1865.

But now experts believe that the little-studied effect may mean that energy efficiency initiatives will be less effective at tackling global warming than was anticipated.

Terry Barker of Cambridge University's Centre for Climate Change Mitigation Research, presented results at a seminar in May showing that, by 2030, the rebound effect could halve the benefits of the energy-efficiency savings predicted by the International Energy Agency (IEA). The bulk of the 'rebound' would occur in residential and commercial buildings, his results suggested.

He concluded that energy efficiency is, and always has been, a driving force behind economic growth.

In a presentation at the same event, Steve Sorrell of Sussex University warned that although rebound effects could be mitigated by effective policy – such as introducing laws to reduce the level of power consumption for products on standby – they nevertheless raise 'fundamental issues' with regards to growth and sustainability.

Just four days later, a new report from the IEA indicated that unless measures were introduced to deal with the rising energy consumption from electronic gadgets, it would triple by 2030. Although electronic devices currently account for only 15 per cent of domestic electricity consumption, the figure is rising as a result of growing demand in the less-industrialised world.

The IEA report, *Gadgets and Gigawatts*, is enthusiastic that energy-saving technologies could help mitigate the rise in demand. But Doug Parr, chief scientist at Greenpeace, told the *Guardian*: 'You can't just deploy new technology and hope it'll get you out of trouble. I get the sense that policymakers don't understand it fully.'

THIS MONTH

30 years ago

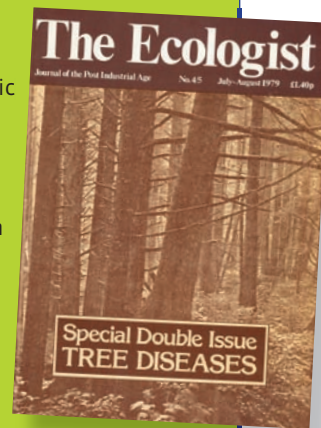
Gradually, during the last three generations, medicine has been directed away from its centuries-old traditions of healing and into the blind alley of allopathy – the myopic method that attacks the symptoms, instead of the causes, of disease.

The systematic replacement of natural therapies (non-toxic substances, diet and the innate healing power of the healer and the afflicted) with an ever-more dazzling and expensive array of invasive, technological weaponry (including surgery, radiation and, foremost, synthetic chemical drugs) is a Faustian bargain that now

constitutes a catastrophic threat to public health...

...The licit drug business is a major secure growth industry generating \$20 billion in sales and nearly \$2 billion in profits annually. Yet a major government drug efficacy study recently found that fewer than 20 per cent of the drugs it reviewed were 'effective'. Of the 10 most commonly prescribed drugs, the report noted 'seven drugs either lacked evidence of efficacy or are the second or third choice for their purpose. Of the other three it is impossible to avoid the conclusion that they are vastly overused'.

Peter Barry Chowka, 'The Organised Drugging of America', *The Ecologist*, July-August 1979



Aquatic invaders

Non-native invasive water plants threaten biodiversity and whole ecosystems. You'd expect to find them on a banned list, not on sale at UK garden centres. **Paul Miles reports**

Invasive water plants that out-compete native species, reducing biodiversity and causing problems such as flooding, are still on sale as ornamental pond plants in garden and aquarium centres around the country, warns the charity Plantlife.

In May, Plantlife launched a survey, 'Against the Flow', appealing for the public's help in researching the extent to which these plants have escaped into Britain's rivers, canals and lakes. It lists five of the most invasive species: parrot's feather, New Zealand pigmyweed, creeping water primrose, floating pennywort and water fern.

'These plants cause a variety of problems,' says Sophie Thomas of Plantlife. 'They form dense carpets that block light, warmth and oxygen from the water, affecting other plants and animals, including rare species such as great crested newts and water voles. Through the survey, the public can be our eyes and ears to report back the extent of their spread.'

Parrot's feather (*Myriophyllum aquaticum*) chokes waterways and can lead to flooding. Originally from Central America, 'it is now surviving the UK winter, which is a worry for the future as this will allow it to spread more widely,' says Thomas. In ponds in Kingston North Common, near Ringwood, Hampshire, parrot's feather is overtaking the habitat of brown galingale, a threatened native plant.

Yet parrot's feather is still on sale around the country. At World of Water in Essex, for instance, it costs £2.99 for a 9cm diameter pot. 'Yes, it spreads very easily,' responded a sales assistant to a phone enquiry from the *Ecologist*.

World of Water stores also sell curly waterweed (*Lagarosiphon major*), which 'forms dense masses in standing water, reducing other plant life and harming invertebrates,' according to Thomas. It is one of many invasive 'waterweeds' (sometimes called 'pondweeds'), but is not yet widespread in the wild across the UK. Originally from southern Africa, it was first recorded in the wild in Britain in 1944. 'Its spread is probably from new introductions, when dumped in the wild by people clearing out their ponds or aquaria,' says Thomas. World of Water aquatic centres, of which there are 20 around the UK, sell curly waterweed for 75p a bunch, wrongly advertising it on its website as *Elodea crispata*.

It can be difficult for the public to know what they are buying at garden centres, as plants are often mislabelled. 'Many genera are difficult to tell apart; some arrive incorrectly labelled or with their old scientific names,' says Thomas. 'We hope it's not deliberate. Some garden centres are even selling plants with names that, taxonomically, don't exist.'

One species the Salisbury-based charity is asking people to look out for is floating pennywort (*Hydrocotyle ranunculoides*), which can grow 20cm a day, clogging waterways. It has been discovered on sale labelled as 'water pennywort' or 'pennywort', and has also been mistakenly labelled native British pennywort. Several species, such as New Zealand pigmyweed (*Crassula helmsii*), introduced in 1911, are often labelled as generic 'oxygenator' plants. New Zealand pigmyweed is also sold as Australian swamp stonecrop, *Crassula recurva*, *Tillaea helmsii* and *Tillaea recurva*.

Sometimes consumers

buy a plant without realising it, when a smaller one 'hitch-hikes' in the pot of another.

A spokesperson from the Garden Centre Association says it works closely with Plantlife to educate its 200 UK members about invasive species, but ultimately, 'it's up to individual centres what they stock'. There is no law to prevent the sale of invasive species, only a voluntary code, the Horticultural Code of Practice. Plantlife says this should change. 'There's a very small handful of plants, about 20, that should be banned by law,' says Thomas.

In 2005, an audit by the GB Non-Native Species Secretariat reported 2,721 non-native species of plants and animals in England. The government body says on its website: 'Invasive non-native plant and animal species are the second-greatest threat to biodiversity worldwide (after habitat destruction). They can negatively impact on native species, can transform habitats and threaten whole ecosystems, causing serious problems to the environment and the economy'. The Government has estimated that invasive species cost the UK economy £2 billion a year.

There are those who argue that some of our most quintessentially 'British' flora and fauna – such as poppies and hares – have been introduced over the centuries, and we should welcome invasives. However, most biologists agree that recent human-brought arrivals that significantly out-compete native plants and animals pose a serious threat to healthy ecosystems and biodiversity. As climate change takes hold, niches will open up for invasive species to exploit even further.

Managing weeds can be a Sisyphean task, as many can reproduce from tiny fragments. 'The best way is to tackle infestations at the top of a water catchment area and work downstream,' says Thomas.

In the Lake District, some invasive plant species are being effectively managed thanks to multi-stakeholder community groups begun by volunteers. Windermere Invasive Species Group began as a small band of concerned individuals. Their dedication and commitment led to the involvement of the Environment Agency and Lake District National Park. 'Community involvement is vital to the success of tackling invasive species,' says Bev Dennison, one of the group's initiators.

Survey forms are available to download at www.plantlife.org.uk

Paul Miles is a freelance writer and photographer



Waterways clogged with waterweed can lead to flooding, as well as affecting other plants and rare animal species

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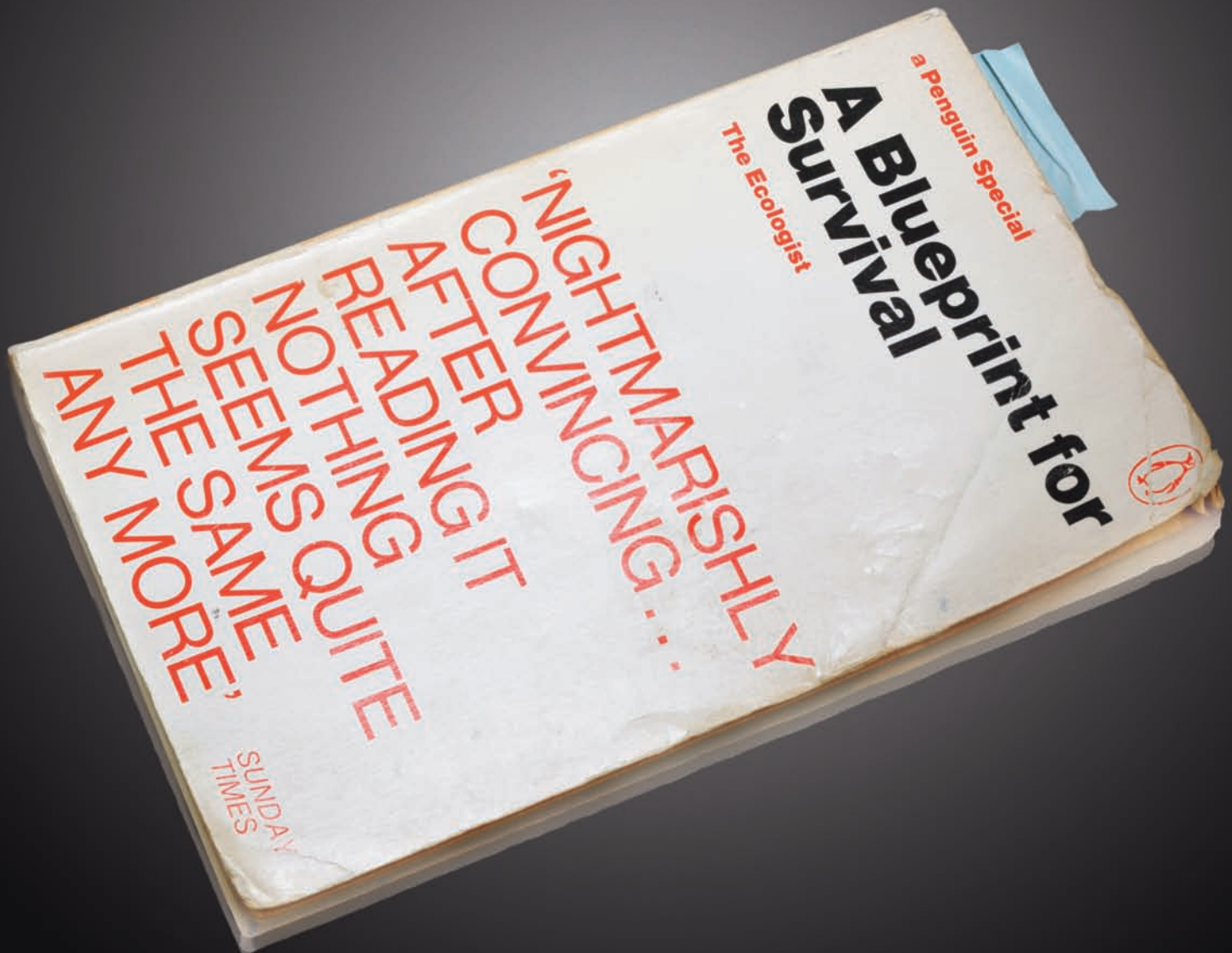
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Where do we go from here?



Environmentalism is at a crossroads. But a different crossroads from the one it was at the last time. A few years ago, the issue, especially for NGOs, campaigners and specialist publications such as the *Ecologist*, was how to remain relevant now that the mainstream had embraced 'green'. The answer was to go deeper and become more radical, rather than play the populist game of '10 things you can do to save the planet'. The failure in many cases to do so has led to this current crossroads. And to the question: What does environmentalism mean?

The media interest in 'green' has resulted in an almighty scramble for objective data. The world is currently awash with statistics and measurements of every kind: carbon footprints, ppms, sustainability indices, economic projections, data on population growth, land use and natural resource depletion. Scientists can barely produce them fast enough. Such things have been meat and potatoes to this magazine for years, but there is a vital difference between the way that data is used in the mainstream and the way we have tried to use it here over the years.

The difference is context. To provide context, you have to care; you have to allow subjectivity, empirical data and

intuitive leaps of logic to become a part of the equation. Our willingness to do this has been evident since the *Ecologist* burst on to the scene in 1970. From the very beginning it was clear that we cared not only for the quantitative data, but also for the qualitative data that informed so much of what we were reporting on; for the human and cultural context in which a philosophy of change must evolve.

To keep us on this road we have been fortunate to be involved with, and to draw information, inspiration and intelligence from, a variety of groups and individuals over the years. It is our pleasure, in this final print edition, to pass these contacts on to you, our valued readers. The list of 101 vital resources is comprehensive but not exhaustive. Even though, in true *Ecologist* fashion, it actually includes 120 organisations, no doubt we will still have missed some out. For this we apologise. But we hope the list – which, of course, includes the new *Ecologist* website – will serve you well, so that in the future, when you read something in the papers or see something on TV that seems devoid of context, you will know where to go next.

With respect and gratitude to you all.

Pat Thomas and the editorial team

CLIMATE CHANGE & ENERGY

In December, all eyes will be turned towards a conference centre in Copenhagen, Denmark, where international delegations will spend three days thrashing out how much carbon emissions from industrialised countries will fall; by what amount rapidly industrialising nations will limit their emissions growth; how little-industrialised countries will be supported in mitigating and adapting to climate change; and how that money will be managed.

Yvo de Boer, head of conference hosts the UN Framework Convention of Climate Change (UNFCCC), believes that if these four elements are agreed upon, the event will have been a success. But the devil, as ever, will be in the detail. In part because as political agreement on the need for tackling climate

change has grown, so too have worries about energy supplies.

2008 was a watershed moment, when the notoriously conservative 'World Energy Outlook' published annually by the International Energy Agency (IEA) contained the first-ever hint that our oil supplies will peak in the next 20 years, and that a 'supply crunch' could hit as early as next year. A UK industry task force including Virgin and Arup believes it may peak by 2013.

And for all the talk of electric cars and rapid roll-out of renewables, a huge amount of wind-power remains stuck in the planning system; the energy needed to charge a nation of electric cars makes our energy targets all the more daunting.

The way forward is anything but clear, but these groups are all great resources for beginning the journey.

Yellow House

If you want inspiration for what you can do at home to make a difference that extends beyond swapping lightbulbs, there's no better place to start than here. Started by energy-saving guru George Marshall, you won't find any slick graphics or flashing advertising, but what you will find is genuinely inspirational ideas, including how to make a kitchen from salvaged wood and how to fit external insulation on old houses.

www.theyellowhouse.org.uk

Centre for Alternative Technology

The Centre for Alternative Technology in Machynlleth, Wales, was founded in 1973, in a disused slate quarry, by the late Gerard Morgan-Grenville. It was designed to be a project 'to show ways of going forward', and continues to be one of the best demonstration sites for ecological living in the country. One recent highlight was the publication of its *Zero-Carbon Britain* report, a roadmap to powering Britain entirely from renewables.

www.zerocarbonbritain.com

Age of Stupid

If you haven't heard of (or seen) *The Age of Stupid* then you've missed out. An extraordinarily powerful feature film about climate change present and future, it was independently funded by hundreds of shareholders and took four years to make. Set in 2055 and telling retrospectively the story of mankind's folly in not acting on climate change, it is being independently screened across the world.

www.ageofstupid.net

Real Climate

Although there is fortunately now consensus on the science behind climate change at a political and business level, you still come across plenty of people who are either confused about climate science or choose openly to deny the facts. If you need solid arguments with which to tackle them, this is a good place to start. Written by climate scientists for readers with no specialist knowledge, it is packed with information and up-to-date figures.

www.realclimate.org

Without the Hot Air

An Inconvenient Truth was not an elegant film, but it did help change the world. David MacKay's critically acclaimed *Sustainable Energy – Without the Hot Air* looks as though it has been typeset by a five-year-old, but crunches the numbers on renewable energy devices, electric cars, nuclear power and a host of other innovations, showing which are worth pursuing and which are merely snake oil. Free download at www.withouthotair.com

Desertec-UK

If we want a non-nuclear, non-fossil-fuelled future with lots of electric cars and electric heating, some believe that concentrating solar power – focusing sunlight to create intense heat, then electricity – is the only way forward. It's not a perfect solution – it will require vast swathes of desert, lots of new power lines and as-yet-undiscussed ownership issues – but it's worth exploring. www.trec-uk.org.uk

Rising Tide

For those who prefer their campaigns on climate change to involve a little less talk and a little more action, this organisation is for you. A leaderless activist network, Rising Tide organises direct action to draw attention to climate change and those it sees as worsening the situation.

www.risingtide.org.uk

Stop Climate Chaos

The Stop Climate Chaos coalition is the UK's largest campaign group, supported by more than 100 organisations that are in turn supported by more than 11 million people. The coalition organises marches and gets itself noticed by being able to command widespread support. It also keeps you up-to-date on what you can do to chivy along the political process.

www.stopclimatechaos.org

350

Founded by veteran US environmentalist Bill McKibben, 350 is a worldwide campaign that asks members to remember one number: 350 parts per million of CO₂, the atmospheric concentration we need to maintain a stable climate (currently we're at 384ppm). The website has news, scientific resources and info on how to spread the 350 message.

www.350.org

Centre for Sustainable Energy

Bristol-based energy think-tank that operates at all levels, from national government to community groups and individuals. Rigorous research and thorough reports set it apart from other lobby groups, and its charitable status gives it an independence and freedom lacked by industry-funded universities.

www.cse.org.uk

FOOD & FARMING

If food is what connects us all then the state of the world's food systems shows just how atomised we have become. Food and farming is in crisis. The last half-century has witnessed the onslaught of industrial agriculture – making monocultures of the many, varied and vibrant food and

farming traditions, creating inequitable social conditions, destroying wildlife habitats and bleeding the nutrients and minerals from the soil and what grows in it. Worse, this is the system, created by Western nations, being exported around the world. But there is hope for food and farming for the future...

The Soil Association

Its ubiquitous food label has done more than any other to bring organic into the mainstream. Behind its label, however, the SA, created by Lady Eve Balfour in 1946, is a grassroots force to be reckoned with. As early as the 1950s, it was alerting the public to the perils of pesticides, and making links between soil fertility and food quality. More recently, its 'Food For Life' campaign has revolutionised school meals, and introduced growing and cooking food to children. The website is a wealth of information – from finding local farmers' market groups to gaining farm skills. www.soilassociation.org

GM Freeze

Consumers don't want it, its impacts on health and the environment are as yet unproven, and it won't solve the global food crisis: so why does the Government persist in pushing genetically modified foods down our throats? An umbrella organisation of campaign groups, GM Freeze aims to ensure governments keep GM off shelves and out of fields, and that patents and profits from food do not go into the pockets of the biotech industry. www.gmfreeze.org

Slow Food

It was the 'McDonaldisation' (for which read homogenisation) of food in his native Italy in the late 1980s that led Carlo Petrini to take up arms against the degrading effects of fast food. In doing so, his now-global network Slow Food has sparked a revolution in the oft-ascetic environmental movement: reminding us foremost that we should enjoy food and celebrate it. Only thus will its integral role in maintaining culture,

tradition and environmental benefits be secured. Slow Food combines advocacy with ways to protect and enjoy endangered foods and food traditions. Slow Food UK's local 'convivia', the organisation's lifeblood, bring together people who love food and food producers for taste workshops and food seminars.

www.slowfood.org.uk

La Via Campesina

Most slow foods are peasant foods, which is why La Via Campesina, the international grassroots peasant farmers movement, brings together 800 million rural workers to fight against the loss of their traditional livelihoods and to achieve food sovereignty. Championing the 'farmer-to-farmer' model of agricultural development, Via Campesina is a network that shares local knowledge and co-ordinates local, national and international demonstrations to counter top-down development policies. www.viacampesina.org

The Permaculture Association

Permaculture, a shortened form of 'permanent agriculture', creates agricultural ecosystems that allow humans to thrive on as little land as possible, as well as helping wildernesses re-establish themselves. Agricultural design has been severely lacking, but at its heart permaculture's raison d'être is to work with nature, not against it. The UK's Permaculture Association is a member-based group that supports people and projects through training, networking and research. It includes many introductory and specialised courses in permaculture.

www.permaculture.org.uk

Landshare

'Land schemes' link people who want to grow their own food with the space to grow it. These include Landshare (www.landshare.net), championed by River Cottage chef Hugh Fearnley-Whittingstall; Landfit (www.landfit.org), which aims to make the most of green spaces in London, starting in the South East; and activist campaign The Land is Ours (www.tlio.org.uk), an umbrella group providing support to local campaigns for land-access rights and reclaiming land for the community.

Food Climate Research Network

How can we reduce the overall climate-changing impact of our food supply chain? The Food Climate Research Network is a research and advocacy group looking at this issue, as well as the flipside of the coin – the impact of a changing climate on how we grow, distribute and consume food.

www.fcfn.org.uk

Compassion in World Farming

Animals are living beings with emotions and intelligence, not commodities. Thanks to the efforts of Compassion in World Farming, farm animals that used to be considered 'goods' are now recognised, by law, as sentient beings – leading to the end of such cruel practices in factory farming as barren battery cages for egg-laying hens, narrow veal crates and sow stalls across Europe. Many challenges remain.

www.ciwf.org.uk

Sustain

An advocacy group representing 100 UK public-interest organisations, Sustain – 'the alliance for better food and farming' – has had a number of successes since its creation in 1999. Shedding light on the links between diet and mental illnesses, exposing the junk in baby food, supporting projects helping low-income families to eat better, and producing briefings on global trade reform, the depth and breadth of its work has assured a wide reach.

www.sustainweb.org

Fatal Harvest

Edited by Andrew Kimbrell, *Fatal Harvest: The tragedy of industrial agriculture* is a collection of essays by leading ecological and agrarian thinkers from Wendell Berry, to Helena Norberg-Hodge. Including the 'Seven Deadly Myths of Industrial Agriculture' and 'Organic and Beyond', it is a vision for agriculture in the 21st century. An iconoclastic debunking of agribusiness propaganda, this is required reading for anyone who considers themselves an environmentalist.

Published by Island Press, £30

WASTE

Waste is nothing more than something we have designated as being no longer of use. Under this definition, as we consume more and more things that have been designed with increasingly short lifespans, our 'waste' has grown exponentially. Although we try not to think about the 'away' when we throw things away, waste has become the elephant in the room. Much of it is toxic and is polluting our air, water and soil as a result of the unenvironmentally friendly means we have developed of disposing of it: either through landfill or through incineration. Thankfully, this is changing.

Viewed in another light, waste is a resource – to be used again, recycled or resurrected for another use. This necessitates a closed-loop waste stream where nothing toxic goes in and nothing toxic comes out. Closing the loop on waste means shifting our design culture from one focused on 'cradle to grave' to one focused on 'cradle to cradle'. It means shifting human behaviour out of an obsession with things 'new' and shifting markets to reassess the importance of preserving natural resources in perpetuity. From human excrement and car tyres to food scraps and tired furniture – most resources have more than one life to give.

Cradle to Cradle design

A paradigm shift in the world of design, the C2C manifesto of architect William McDonough and German chemist Michael Braungart as detailed in their book *Cradle to Cradle: Remaking the way we make things* (Vintage, £8.99), aims to replace the outmoded 'take, make and waste' industrial system with 'a new spirit' of ecologically intelligent design to create buildings, manufacturing systems and regional plans that work with, not against, nature.

www.mcdonough.com/cradle_to_cradle.htm

Nearly Out Of Date

A website that allows businesses to advertise products and resources that are close to their sell-by-date, and consumers to buy them at a discounted rate, thus saving them from landfill. The brainchild of Scottish entrepreneur Ray Conn, the site's usefulness can only grow as more new businesses sign up.

www.nearlyoutofdate.com

The Book of Rubbish Ideas

If your life and home are overflowing with unnecessary junk, this guide to cutting down on clutter by Tracey Smith, founder of International Downshifting Week, will help. Escape the buy-now-throw-later culture, and you'll soon be seeing 'rubbish' as a resource, as well as saving yourself waste, time, money and stress.

Published by Fragile Earth, £6.99

Biologic Design and Humanure

Biologic offers a sustainable alternative to the industrial way we treat waste: localised Wetland Ecosystem Treatment (WET) systems – earth banks and ponds planted with wetland trees and plants (www.biologicdesign.co.uk) – for wastewater purification, resource production and enhanced biodiversity. 'Humanure' is a term coined by Joseph Jenkins in the *Humanure Handbook* (Jenkins Publishing, £16.95) to describe human excrement recycled through composting, avoiding the use of harmful chemicals. (www.weblife.org/humanure).

Emmaus

A charity that offers a home to the homeless in self-supporting 'Emmaus Communities', and work collecting, renovating and reselling donated furniture. Residents receive board, food, clothing and a small weekly allowance in exchange for their hard work and a fresh start in life. You get a recycled, reconditioned chair.

www.emmaus.org.uk

Waste Watch

An independent not-for-profit charity founded in 1987 that aims to 'make waste issues mainstream and encourage waste reduction, reuse and recycling'. Through research, monitoring, education and training, it helps businesses, government and individuals improve efficiency, save money and reduce environmental impacts.

www.wastewatch.org.uk

Freecycle

Aiming to 'keep good stuff out of landfill', this grassroots movement allows people to relieve local Freecycle members of unwanted possessions and gift theirs in return. With 5,000 Freecycle groups and almost seven million members, it's a global community that offers a rewarding way of passing on stuff you don't need.

www.uk.freecycle.org

People Against Incinerators

With roughly 2½ million tonnes of municipal waste incinerated in the UK each year, this campaign to stop Veolia and Nottinghamshire County Council building an incinerator in Rainworth has repercussions for us all. Endorsed by David Bellamy, PAIN advocates more environmentally friendly waste technology, such as anaerobic digestion.

www.p-a-in.co.uk

Women's Institute

Concerned about the amount of unnecessary packaging of food on supermarket shelves, in 2005 the WI passed a resolution calling for action to reduce waste and preserve natural resources. The WI Packaging Day of Action saw 200,000 members from across the country return excess packaging to shops.

www.thewi.org.uk

Earthships

With earth roofs and walls made of car tyres and other recycled materials, Michael Reynolds' pioneering Earthships are cutting-edge 'bioteecture' that utilise natural resources to provide heat, power and water. They heat and cool themselves, use plants to treat wastewater and harvest rain for drinking – a blueprint for the way we should all be building in the future (see also 'Garbage warrior', page 54).

www.earthship.net

FareShare

FareShare is a national charity that has supported communities to relieve food poverty since 1994. Food waste in the UK has reached shocking proportions and FareShare uses quality food surplus from organisations and the food industry to provide meals for vulnerable groups such as the elderly or the homeless. It also offers training and education on nutrition in the Eat Well, Live Well programme. Today, FareShare has 12 locations throughout the UK and relies on some 300 volunteers. Its Three-Year Vision campaign aims to open 18 more depots and offer 6,000 volunteer opportunities, enabling it to redistribute 20,000 tonnes of food per year by 2011 and help 100,000 people everyday.

www.fareshare.org.uk

ECONOMICS & BUSINESS

We're living in an age of 'post'. Post-credit-crunch, post-Anglo-Saxon capitalism, post-unregulated banking sector, post-bonus culture. We're tightening belts, copies of *Das Kapital* are flying off the shelves and Asda's CEO has christened this 'The Age of Austerity'.

But has anything really changed? For all the talk of Green New Deals, the last budget and welter of global economic stimulus packages suggest that we simply hope to defibrillate our economy back to groggy life and carry on as usual.

So, while business secretary Lord Mandelson is happy to prefix every speech with the words 'low-carbon', we are living with national policies that, according to the Environmental Transport Association, could see a punter trade-in a highly efficient VW Lupo (emitting just 81g of CO₂ per km) for a monstrous Bentley

Arnage (465g CO₂ per km), and receive a £1,000 Government sweetener for their trouble.

Equally, while businesses are being hit with progressively tougher carbon taxes, opportunities to improve employees' quality of life and reduce their environmental impact – e.g. by signing up to the EU Working Time Directive, which limits staff hours – are passed up in favour of a 'flexible' labour market.

To breathe the words 'no growth' is heresy in a recession, but one group has been brave enough to do so: the Government's own Sustainable Development Commission, in its report *Prosperity Without Growth?* It may not be popular, but it is brutally honest about the stark contradictions in our current economic model.

There are plenty of ideas out there for making business and the wider economy sustainable parts of the ecosystem – here are just some.

Green New Deal Group

The Green New Deal is an attempt by a number of leading sustainable development luminaries to turn the Government's economic stimulus package into an opportunity to jump-start a green economy. It calls for tighter regulation of banking and finance, massive investment in renewable energy and green jobs, and the breaking-up of large and unwieldy financial institutions. It's not perfect, but it does have widespread support, and that makes it a powerful idea.

www.greennewdealgroup.org

New Economics Foundation

Independent think-tank NEF has been churning out considered, powerful ideas for developing a sustainable economy since 1986, when it was founded by the leaders of The Other Economic Summit. The driving force behind the Green New Deal (see above), the group publishes annual 'Accounts of Wellbeing', offering an alternative indicate to GDP with which to judge world progress. The starting point for any research on alternative economic ideas and systems.

www.neweconomics.org

Green Economics

Not a website, but a book – an extremely comprehensive and well-written book, in fact, but our very own columnist, Molly Scott Cato. Reputedly the only green economist to hold an academic post in the UK, Scott Cato has written widely on sustainable alternatives to the economic orthodoxy. *Green Economics* is in many ways a compendium of her research.

Published by Earthscan, £19.99

The Institute for Local Self-Reliance

Based in Minneapolis, USA, the ILSR doesn't specifically focus on economics or finance. Instead, it aims to provide information and strategies on how to encourage local economies that are self-supportive, with policies and businesses designed to meet local or regional needs in a sustainable way.

www.ilsr.org

Systemic Fiscal Reform Grp

It hasn't got the sexiest name in the world, but the SFR Group has made some exciting demands. It calls primarily for a shift of taxation away from income and inheritance

and towards resource use and capital assets (especially land ownership). It also proposes abolishing welfare payments and replacing them with a citizen's income available to all.

www.systemicfiscalreform.org

LETS

Or Local Exchange Trading Systems. Essentially, systems for swapping goods or services without using money. You earn LETS 'credits' by providing a service, and can then spend the credits on whatever is offered by others in the scheme – from childcare to tool-hire. Estimates suggest there are around 30,000 people involved in LETS schemes around the UK.

www.letslinksuk.org

Feasta

'Feasta' means 'in the future' in Irish, but it also roughly stands for the Foundation for the Economics of Sustainability, the Dublin think-tank founded in 1998 to 'explore the economic, cultural and environmental characteristics of a truly sustainable society'. Feasta turns out a lot of good stuff, and attracts writers such as Richard Douthwaite, who wrote the seminal book *The Ecology of Money* (Green Books, £7).

www.feasta.org

Time banks

Similar to LETS, but measured in time spent, rather than credits, which can vary according to the activity carried out. Somewhat better supported than LETS, time banks usually have a paid member of staff as an administrator and there is specific software to keep track of the flow of 'time' in the scheme.

www.timebanking.org

Prosperity Without Growth?

For what is essentially a Government body, the Sustainable Development Commission produces some controversial stuff. It recently put out a groundbreaking report, *Prosperity Without Growth?*, challenging the idea that economic growth was the way towards a sustainable world. Some brilliant reasoning by leading consumption scholar Professor Tim Jackson makes this a must-read.

Download at <http://tinyurl.com/nogrowth>

James Robertson

It's not often we'd recommend the thinking of just one person, but James Robertson deserves that honour. Born in 1928, Robertson became a consultant after a career in government and went on to establish the New Economics Foundation. The author of several books, he still publishes a e-newsletter that promotes a sane, human and ecological alternative to mainstream economics.

www.jamesrobertson.com

CONSUMERISM

There is enough for everyone's need, but not for everyone's greed,' said Gandhi – but how much does each of us need? 'More' is the simple answer that is drilled into us subliminally and overtly in Western and, increasingly, most lesser-industrialised countries. If everyone in the world lived like the average

European, we'd already need three planets to live; if it were an average American we'd need five planets. Consuming has become a culture – what with the Government urging us to shop for the nation and businesses designing goods for built-in obsolescence. What's needed on all fronts to bring us back into the realm of one-planet

living is dramatic, far-reaching and systemic change.

Becoming an 'ethical' consumer is the first step in this direction. This means putting principles into action every time we use our pocketbooks. But delving deeper into the idea of consumerism ultimately takes us to a point where happiness comes from how little we own, not how much.

The Story of Stuff

A resource for all ages, this fact-filled 20-minute film is the ultimate primer on how our consumption affects communities and the environment. It reveals in plain language what most governments and corporations don't want us to know – the enormous impact that comes from the manufacture, use and disposal of most of the world's consumer goods. www.thestoryofstuff.com

Ethical Consumer

Shopping smart means knowing what's behind a label. The Ethical Consumer Research Association, a 1988 workers' co-operative that promotes the ethical use of consumer power, produces Ethiscore reports – buyers' guides to products ranging from baby food to broadband, rating manufacturers, giving detailed company information and measuring a wide range of ethical criteria. www.ethiscore.org

Rainforest Action Network

Knowledge inspires action. 'If a tree falls in the forest, and no-one is there to hear it we make noise,' says RAN, which has repeatedly and successfully mobilised consumers in direct action against destructive policies at such corporate giants as Citigroup, Boise Cascade and Goldman Sachs. The resultant changes in corporate policy have saved millions of acres of forest around the world. www.ran.org

Clean Clothes Campaign

In terms of the labour behind clothes labels, three out of every four garments sold in the West have come from a poor country, and there are some 100 million garment workers toiling away worldwide. CCC is an alliance that includes trade unions and NGOs in 12 European countries, and is demanding answers from the world's largest retailers

as to how they make their clothes so cheap. Can it have anything to do with poverty wages for the garment workers, unpaid overtime and repressive working conditions? www.cleanclothes.org

Fairtrade

A better, more progressive business model, and one that puts people and the planet ahead of profit, Fairtrade ensures producers get a fair price for their work and that resources get channelled back into the community. It brings consumers closer to the producers behind their goods, and, as a recognisable and widely available label, has enabled people to vote with their feet when buying coffee, tea, cotton, bananas and a range of other certified products. www.fairtrade.org.uk

Voluntary Simplicity

Living simply does not mean sacrifice. 'Sacrifice is the modern-day consumer lifestyle, overstressed, overbusy and overworked,' says Duane Elgin, an 'evolutionary activist' who has explored the practical and philosophical meaning of simplicity. *Voluntary Simplicity*, the book and movement he launched in the 1980s, is an 'alternative path ahead that enables all of humanity to live more lightly upon the Earth, while at the same time experiencing a higher quality of life,' he says. It's about finding aliveness in our relationship to everything. www.awakeningearth.org

Enoughism

We live in a time of unprecedented abundance but our planet isn't happy and neither, it seems, are we. Becoming an 'enoughist' means asking yourself 'how much is enough?' and then developing a sense of 'enough'. *Enough: Breaking Free from the World of More* by John Naish includes the nine questions that need to be answered before you buy that thing. **Published by Hodder & Stoughton, £7.99**

Co-operatives

Most corporations exist to make money for shareholders, but not so co-operatives, which are member-owned initiatives – meaning no outsider investors take profits. They include the Co-operative Bank (www.co-operativebank.co.uk), Phone Co-op (www.thephone.coop), and food-buying groups such as Suma (www.suma.coop).

Get Swapping

Eschew the cult of the 'new' – if you can't make do with what you've got then why not swap it? For general goods there are websites such as Ooffoo (www.ooffoo.com) and Virtual Skips (www.vskips.co.uk); for books there are the likes of Bookmooch (www.bookmooch.com) and for clothes, Posh Swaps (www.posh-swaps.com).

Church of Stop Shopping

Why not a bit of humour to liven up the anti-consumerist mission? Reverend Billy's Church of Stop Shopping is a musical and environmental tour-de-force. Backed by a full gospel choir, many mortals hearing Reverend Billy's sermons for the first time have had a life-altering experience. Driving demons out of Starbucks cash registers and singing the praise of independent shops and small communities, he asks prophetically, 'What would Jesus buy?' www.revilly.com

Adbusters

Canadian anti-consumerist website and magazine advancing 'the new social activist movement of the information age'. With its situationist principles, 'subvertisements' and social marketing campaigns (Buy Nothing Day and TV Turnoff Week), *Adbusters: Journal of the mental environment* is a backlash against the \$450-billion-a-year advertising industry in favour of a 'clean mental environment'. www.adbusters.org

HEALTH

It's a frustrating fact that even in the 21st century much of what informs health 'care' remains rooted in old-fashioned thinking. Nearly every modern medical miracle is still rooted in the notion that symptoms arise independently of how we think or feel or live.

A couple of months ago a story appeared in the *Daily Mail* in which actress Gwyneth Paltrow expressed fears about the chemicals in everyday products and their link with cancer, especially in children. 'Rubbish', a spokesperson for Cancer Research UK said: there is no known environmental cause for the disease. This single, arrogant, ignorant statement said it all. Not only do we believe that we are superior to nature, but also we truly believe that our health is completely unaffected by what is in the environment – no matter how

toxic. This belief needs to change and it is gratifying that in the run-up to Copenhagen in December 2009, health-related NGOs are lobbying for public health – and the way it will be impacted by climate change – to be central to the debate.

So what can you do – apart, that is, from never giving another penny to Cancer Research UK? You can get smart, be suspicious of miracle pills, 'oscopies' and 'ectomies', as well as of the way that so many of life's challenges, from birth to death, have become medicalised, in order to create a marketplace for new drugs and technologies. You can and should seek independent advice from outside the system.

Many of the organisations below rely on donations and subscriptions to survive. Remember that when they are handing out free advice that could save your life.

Environmental Working Group

A non-profit group that provides useful consumer resources – for instance searchable databases like Skin Deep and in-depth reports such as *The Shoppers' Guide to Pesticides in Produce*. EWG also campaigns for policy change, using the research data to persuade bureaucracies to rethink science and strengthen regulation. US-based, its research is applicable to products all over the world. www.ewg.org

Women's Environmental Network

Established in 1998, WEN's health campaigns have tackled issues such as breast cancer, as well as toxic chemicals in the environment and in the products we use every day. It produces a range of thoughtful, well-researched reports, and remains an outspoken and challenging voice in the field of women's health. www.wen.org.uk

Mast Sanity

Mast Sanity raises awareness of the issues surrounding the use of mobile phones. It demands that masts should not be located close to schools, residential areas, old people's homes, hospitals and other sensitive

locations, and helps communities negotiate their way through an often bureaucratic and chaotic planning process that accompanies the construction of mobile phone masts. www.mastsanity.org

Natural Justice

Over 20 years, Natural Justice has overseen extensive research into the link between nutrition and violent behaviour. This research has shown there can be marked changes in behaviour when diets are altered to include brain-nurturing nutrients. The implications of this simple intervention for a more peaceful society cannot – really must not – be overlooked. www.naturaljustice.org.uk

Association for Improvements in the Maternity Services

Pizzas are delivered; women give birth. How a child is born can have a profound effect on its health and its life. The experience of birth can also either empower a woman or destroy her confidence in her ability to parent. Through its website, quarterly journal and booklets it campaigns for women's rights for normal, non-medicalised birth and provides independent support and information www.aims.org.uk

Mercola

This busy website manages to straddle the commercial and the radical arguably better than most. It takes no third-party advertising or sponsorship, and exists to educate people about the way the current medical system covers up or removes symptoms with so-called 'solutions' such as drugs and surgery. Its 50,000 pages cover every conceivable medical topic and report on the latest medical news (www.mercola.com). In the UK, check out the website of Dr John Briffa, one of our favourite activist doctors, whose website cuts through the hype and fear, bringing you useful, sane and practical health information (www.drbriffa.com).

UK Pesticides Campaign

Campaigner Georgina Downs' ongoing ill-health due to pesticide poisoning prompted her to become an expert on pesticides' effect on human health, as well as on current legislation and regulations on the use of pesticides. Since then she has been a vocal and tireless advocate for change in the UK Government's policy on pesticide use (www.pesticidescampaign.co.uk). Another important resource is the Pesticide Action Network UK. PAN-UK campaigns to eliminate toxic pesticides from the environments where we live and work as well as promote safer alternatives (www.pan-uk.org).

What Doctor's Don't Tell You

WDDTY reinvented health reporting in the UK – and indeed throughout the world – by producing thoughtful and in some cases deeply challenging reports on all aspects of health based purely on the published medical evidence. Over the years it has exposed many miracle cures as scientifically baseless, even dangerous. Over its 20-year history it has produced an astonishing catalogue of special reports, newsletters and booklets that empower people to take control of their own health. www.wddty.com

Natural Death Centre

How we die is as important as how we were born and live. NDC provides independent funeral advice including information on all types of funeral choices, including family-organised, environmentally-friendly funerals, and natural burial grounds (www.naturaldeath.org.uk). For greener burials that are better for the environment and slow funerals that acknowledge grief in a more humane way than the usual conveyor-belt ceremony, see also the good work of Bristol-based Memorial Woodlands (www.memorialwoodlands.com).

CULTURE CHANGE

Around the world, cultures are in flux as technological innovation and the shift away from local towards global has affected all matters of life. Transformations in our relationship with nature, other people and other communities throw up many difficult questions. Can a 'quality of life' coexist with a 'life in the fast lane'? Are cultural traditions a casualty of the culture of convenience? Is interconnectedness really bringing us closer together? Can communities be self-sufficient while being sufficiently diverse? Is small still beautiful?

While the search for answers isn't easy, there are many wise voices in

the wilderness. A generation of everyday heroes is thriving, within which social entrepreneurship is giving small ideas a big chance; smart grids are powering small communities; designers are pioneering a sustainable future and anyone can text message for debt-relief. Inspiration for change comes in many guises – from downshifting your personal life to celebrating a community Apple Day to joining a movement for social justice. As we 'place' ourselves in the changing world, we are actively engaging with the power to perform world-changing acts. The fox is in the henhouse – we hens need to get a-flapping.

Culture Change

California-based education- and activism-oriented website with features and critical comment on health, climate change, peak oil and local economy issues, founded by non-profit organisation the Sustainable Energy Institute (formerly Fossil Fuels Policy Action). Proponents of the 'big picture and fundamental change', opponents of the dominant paradigm and 'the seductive trance of the renewable energy technofix', it offers 'eyes-open' responses to our current crises through media, speaking, activist alerts and projects.

www.culturechange.org

Worldchanging

US online magazine and now book – *Worldchanging: A user's guide for the 21st century*, edited by Worldchanging co-founder Alex Steffen – that provides its readership with tools for change through 'solutions-based-journalism'. Built around the concept of 'bright green environmentalism' (technological change + social innovation = sustainable development), its international network of writers aims not only to identify problems, but also to suggest answers, new systems and new ways of living.

Published by Harry Abrams, £9.99
www.worldchanging.com

Schumacher College

Named after *Small Is Beautiful* author EF Schumacher, this educational establishment set on the Dartington Hall Estate near Totnes, Devon, offers courses on subjects relating to environmental and social sustainability, as well as regular seminars and open days. A masterclass in the most urgent challenges of sustainability, students are encouraged to 'be the change'.

www.schumachercollege.org.uk

The Corner House

Founded in 1997 by Nicholas Hildyard, this UK-based research and advocacy group focuses on human rights, the environment and development. It supports movements for environmental and social justice – land or water rights, healthcare, campaigns against mining – as well as documenting issues of social, economic and political power and practical strategy.

www.thecornerhouse.org.uk

ETC Group

Advocates on global issues for 25 years, the Action Group on Erosion, Technology and Concentration investigates the erosion of land, rights and cultures, assesses new technologies (agriculture, genomics) to see how they impact on the poor and

marginalised, and monitors international governance and corporate concentration in technologies to ensure the 'sustainable advancement of cultural and ecological diversity and human rights'.

www.etcgroup.org

Findhorn Foundation and Global Ecovillage Network

Begun in 1962 as a garden plot in a caravan park, the Findhorn Foundation has turned today into a spiritual community, ecovillage and an international centre for holistic education (www.findhorn.org). GEN was set up in 1995 to help ecovillages share ideas, and to support and encourage the evolution of sustainable settlements across the world (<http://gen.ecovillage.org>).

Transition Towns

Rob Hopkins' creative response to global issues starts at a local level. A step-by-step model for communities to lower carbon emissions, decrease dependence on oil, and become more self-sufficient and resilient to climate change and peak oil, the Transition movement also holds the promise of a more vibrant and connected society.

www.transitiontowns.org

International Downshifting Week

It isn't necessarily about giving up your highly paid job and moving to the country (unless you want to), but slowing down, living with less – stuff, money, stress – and adopting a simpler, greener lifestyle. Tracey Smith's initiative shows that even a few basic changes can help 'tip the work-life balance in favour of life'.

<http://downshiftingweek.wordpress.com>

Common Ground

The environmental campaign group behind Flora Britannica, Apple Day, Community Orchards and Confluence, Common Ground was formed in 1982 by former FoE colleagues Sue Clifford and Angela King, and environmentalist Roger Deakin. Linking nature with art, it uses the creative impulse and cultural events to inspire people to change things at a local level.

www.commonground.org.uk

Low-Impact Living Initiative (LILI)

Searchable online resource of more than 130 topics – from factsheets and books to courses, forums and links – to help people get started on the road to sustainability, reduce their impact on the environment, gain new skills, improve their quality of life, live in a healthier and more satisfying way, have fun and save money.

www.lowimpact.org

WATER

Water covers 70 per cent of the planet. Of that amount, 97 per cent is undrinkable seawater. Another two per cent is locked up in the polar ice caps – leaving one per cent available for human use. More than half of that is polluted.

What is more, some of the mightiest rivers on the planet, including the Ganges, the Niger and the Yellow river, are drying up because of climate change.

Aquifers are being depleted all over the world. Those that are replenished by rain can end up polluted by nitrites used in industrial farming, sewage and other chemicals that gradually seep into groundwater.

Our seas are awash with man-made rubbish that won't disintegrate, heavy metals that persist for thousands of years in the food chain, radioactive nuclides, oils spills and untreated sewage.

Tap

Drinking tap water certainly makes more economic sense and is a better environmental choice than buying bottled. Of the three billion empty plastic bottles thrown away in Britain each year, only 10 per cent are recycled, with the rest going into landfill. Founded by ethical communications agency Provokateur, as well as campaigning against bottled water, Tap has championed higher-quality tap-water and sells products that make drinking tap water fashionable, easy and safe.

www.wewanttap.org

Waterkeeper Alliance

Founded on the premise that citizens must roll up their sleeves to defend their waterways, the Waterkeeper Alliance is an international grassroots advocacy organisation based in the US, with 182 waterway-conservation programmes and growing. Part investigator, scientist, lawyer and advocate, 'waterkeepers' are people who are recognised by communities, local governments and media as a voice for the protection and preservation of a particular body of water, be it river, lake or bay.

www.waterkeeper.org

We in the West we take our water for granted – it's cheap and available (at only £1 per 10,000 litres) – yet an estimated 1.1 billion people worldwide lack access to clean drinking water. The increase in global water-use expected by 2020 is 40 per cent.

Future wars over water – for humans and for agriculture – are now considered inevitable. There is no substance on Earth more crucial to survival than water – which makes it all the more attractive to privatise. Water has become a business opportunity, a commodity, and privatisation often denies local people access to this new 'blue gold'.

Many of the groups below have worked tirelessly towards the creation of a world where we can protect our water supplies from pollution, ensure stocks last and enable as many people as possible to have fair and easy access to it.

Waterwise

Demand for water is growing. In the UK we use about 150 litres of water a day (enough to fill 15 buckets) – almost 50 per cent more water than 25 years ago. Waterwise, a UK NGO, is focused on decreasing water consumption in Britain and is the leading water authority on water efficiency. It says saving water will make sure the water we do get lasts, and will reduce the pressure on the environment.

www.waterwise.org.uk

Blue Planet Project

Access to water is a fundamental human right. This global initiative based in Canada works to protect the world's fresh water from the growing threats of trade and privatisation.

www.blueplanetproject.net

International Rivers

This group focuses on stopping destructive river projects around the world and defending the rights of communities that depend on them. As well as opposing destructive dams and the development model they advance, it encourages better ways of meeting the need for water, energy and protection from floods.

www.internationalrivers.org

Fluoride Action Network

Why is it that a chemical historically used as a rat poison and linked to cancer, brittle bones and thyroid disease is also routinely added to the water supply of some six million Brits? In the US, 70 per cent of the water is fluoridated. The Fluoride Action Network, an international coalition based in the US, is packed with information about the toxicity and hidden health impacts of fluoride.

www.fluoridealert.org

Algalita

Plastic rubbish in our oceans is one of the most under-recognised yet ubiquitous issues facing our planet. It affects millions of square miles of ocean and is miles deep, either floating, swirling beneath the surface or sunk to the sea floor. Algalita is a US-based non-profit, independent research foundation examining the scope of plastic contamination and its implications on the food chain. The focus is on the North Pacific subtropical gyre, dubbed the Great Pacific Garbage Patch, a swirling vortex of plastic soup estimated to be twice the size of Texas.

www.algalita.org

Surfers Against Sewage

Wetsuits, gas masks and a six-foot inflatable turd have been the essential attention-grabbing tools of the trade used by this UK non-profit organisation, founded in 1990 by a group of Cornish surfers who were 'sick of getting sick' through repeated ear, nose, throat and gastric infections after going in the sea. Joined by like-minded water-users from around the UK, the campaign has had a considerable impact.

www.sas.org.uk

WaterAid

WaterAid lobbied to establish the right to water, declared by the UN in 2002, and now working to help the world's poorest people achieve that right. An international charity, it works in 17 countries, providing water, sanitation and hygiene education. It is also lobbying to double the financing from all sources that is currently spent on the issue.

www.wateraid.org/uk

Troubled Water

Written in 2004 by Dame Anita Roddick and Brooke Shelby Biggs, with contributions from Vandana Shiva and Robert F. Kennedy Jr, this book (subtitled *Saints, Sinners, Truth and Lies about the Global Water Crisis*) is a helpful if frightening overview of the growing global water crisis. Proceeds from its sale help support grassroots groups, NGOs and individuals trying to address this problem.

Published by Anita Roddick Books, £9.99
www.troubledwater.org

WILDLIFE & ECOSYSTEMS

We may not be able to see huge and vital parts of the world being damaged or destroyed on a daily basis, but out of sight should not mean out of mind.

Breathable air, healthy soil, fresh water and the stability of our climate all rely on our planetary life-support systems – like rainforests and oceans – being healthy.

It's time the 'developed' world stopped viewing nature in purely economic terms as 'natural resources' (mining, petroleum extraction, fishing, hunting and forestry are generally considered natural-resource industries), and started valuing rainforests and oceans as essential biological treasures to be protected.

Pavan Sukhdev, the Deutsche Bank economist leading a European study on ecosystems, reported in October 2008 that we are losing natural capital worth between

\$2 trillion and \$5 trillion every year as a result of deforestation alone. This figure is based on estimating the value of the services – such as locking up carbon and providing fresh water – that forests perform and calculating the cost of either replacing or living without them.

In this way, the chainsaw massacres happening in forests thousands of miles away affect us all. Likewise, toxic chemicals threaten our air, land, water and wildlife – and ultimately ourselves.

Scientists say species are becoming extinct 1,000 times faster than we'd expect naturally. Fish populations are dwindling year by year. The scale and actual and potential loss of wildlife can seem overwhelming. Here are a selection of organisations dedicated to protecting species from extinction and keeping wildland from turning into wasteland.

The Stalwarts: Greenpeace, WWF, FOE

Household names and international in scope, these NGOs have clout and experience on the environmental front line. Greenpeace (www.greenpeace.org) campaigns include protecting ancient rainforest, defending oceans and eliminating toxic chemicals. The conservation work of WWF (www.wwf.org) focuses on 36 species groups and 35 terrestrial, freshwater and marine ecoregions. Friends of the Earth's 'Healthy Planet' campaign tackles the interconnected problems of rainforest destruction, overconsumption and the food system (www.foe.co.uk).

Rainforest Foundation

Every year an area of rainforest the size of England and Wales is cut down. Since it was founded in 1989, the Rainforest Foundation has helped indigenous and local communities protect more than 100,000 square kilometres of rainforest. It campaigns to influence national and international laws to protect rainforest and their inhabitants (www.rainforestfoundationuk.org). The Prince's Rainforests Project also works with governments, businesses and non-profit organisations to find solutions. It aims to 'make trees worth more alive than dead' (www.rainforestsos.org).

International Fund for Animal Welfare

Threatened animals have an important ally in IFAW. The charity was started up four decades ago by a group of Canadian citizens concerned at the brutal commercial hunt for whitecoat harp seals. From stopping the ivory trade to saving whales from extinction and rescuing 19,000 oiled penguins, IFAW works to create solutions that benefit animals and people.

www.ifaw.org

The Woodland Trust

Ancient woodland in Britain is being felled at a rate even faster than the Amazon rainforest according to the Woodland Trust, the UK's leading woodland conservation charity. With more than 1,000 woodland sites within its care, it aims to protect what remains of our ancient tree heritage and expand the area of new native woods.

www.woodlandtrust.org.uk

People's Trust for Endangered Species

Many UK species are also under threat. Water voles, bottlenose dolphins, brown hares and hedgehogs are all currently showing a long-term decline. This conservation charity created in 1997 aims to preserve endangered species in their own habitats.

www.ptes.org

Traffic

As human populations have grown, so has the demand for wildlife, whether in terms of consumption (food, leather goods, timber) or trade, for those in extreme poverty who are desperate for whatever they can get. Traffic is an international organisation that presents practical solutions to the problems created by the illegal and unsustainable wildlife trade.

www.traffic.org

Survival International

For centuries tribal peoples have lived in harmony with the natural world. Their knowledge and understanding should be valued; instead, in the name of 'progress', there have been land-grabs, massacres and attempts to 'civilise' and convert to Western ways. Survival International supports tribal peoples worldwide. It has pushed tribal issues into the political and cultural mainstream through campaigns, advocacy and education.

www.survival-international.org

Oceana

Saving the oceans may take decades, but to achieve real benefits advocacy group Oceana conducts focused campaigns that have a specific timeframe and objective. Oil pollution, seafood contamination, driftnets and discards (the portion of the animal catch thrown away at sea) are just some of problems it tackles.

www.oceana.org

Marine Conservation Society

Do you know your sustainably sourced halibut from your overfished swordfish? If you're looking for guidance on what not to buy, visit the Marine Conservation Society's online lists of 'Fish to Eat' and 'Fish to Avoid' (www.fishonline.org). Based in the UK, the MCS is a 25-year-old charity that campaigns for clean seas and beaches, sustainable fisheries and protection for all marine life (www.mcsuk.org).

The similarly initialled Marine Stewardship Council (MSC) is an international certification and ecolabelling programme for sustainable seafood. Look for its blue ecolabel in shops or restaurants. www.msc.org

Wild Law

Small groups of 'wild lawyers' use the law as a tool to level the playing field between the powerful corporations and other living things. An example of wild law in action is the Trees Have Rights Too Campaign spearheaded by UK barrister Polly Higgins. She is calling for a UN Universal Declaration of Planetary Rights (www.treeshave.rightstoo.com). For more on wild law, check out ClientEarth's website (www.clientearth.org) and the Center for Earth Jurisprudence (www.earthjuris.org).

INDEPENDENT MEDIA

Think about the term 'mass media', and the monoculture of news, stories and events it represents. Pretty much everything we know – or think we know – about the world outside our own family or neighbourhood comes to us via our exposure to newspapers, news magazines, radio and TV.

It is a lifeline of sorts, yet readers are deserting the mainstream media in droves. They read freesheets on the bus or tube then toss them on the ground to be swept up with all the rest of society's rubbish. If the media moguls want to understand this desertion they need look no further than the way 'news' has devalued itself by going for lowest common denominator stories that focus on celebrity and tittle-tattle, and those tell you what, but not how or the why. Devoid of context and

depth, our news providers have become largely devoid of value.

Independent publications traditionally struggle with small markets and smaller revenues. But editorial that can't be bought is priceless, and such publications deserve your support arguably more than any big daily, since here is where you find the real news (indeed, here is where journalists from newspapers and TV trawl for stories they can't find themselves). Here is where you find campaigns, context and investigations that would otherwise be spiked because they offend potential advertisers and stockists.

These publications need your support... and you need theirs to help make sense of the ever-more complex information we all require to move confidently into the future.

Huffington Post

US website and forum for political webloggers, launched in 2005 as a liberal alternative to right-wing news sites and to 'redress media bias', and now ranked by the *Observer* as the world's most powerful blog. As well as commentary and news coverage, it recently announced major funding for a new not-for-profit investigative journalism arm.

www.huffingtonpost.com

AlterNet

Liberal news website run by the Independent Media Institute, whose mission is 'inspire citizen action and advocacy on the environment, human rights and civil liberties, social justice, media, and healthcare issues'. Free original journalism, critiques, opinion and a collection of the best of the other independent news sites.

www.alternet.org

Common Dreams

Progressive anti-war US news website launched in 1997 by political activists Craig Brown and Linda Newhouser, 'to inform, to inspire, to ignite change for the common

good'. With more than a million readers every month, its contributors have included Noam Chomsky, Naomi Klein, Michael Moore and Harold Pinter.

www.commondreams.org

Corporate Watch

Independent Oxford-based research and publishing group that aims to expose the truth about large corporations, to reveal their detrimental effect on society and to combat corporate crime and power, both economic and political. Its reports and company profiles across all sectors offer invaluable insight into the inner workings of multinationals.

www.corporatewatch.org.uk

Ecologist Online

Our new website is now online, continuing to campaign vigorously on environmental issues by publishing in-depth analyses, campaign updates, advice on greener living, insightful comments and opinions, as well as maintaining one of the world's most extensive ecological archives. Daily news will keep you up-to-date with the most important green (or un-green) happenings.

www.theecologist.org

Worldwatch Institute

Washington-based research organisation with a global focus, founded in 1974 by Lester Brown. Worldwatch monitors and disseminates data on health, population, water issues, biodiversity, governance and environmental security, providing information and analysis that focuses on the challenges of climate change, resource degradation and population growth.

www.worldwatch.org

GM Watch

Founded and edited by Jonathan Matthews, this website has been at the forefront of the battle against GM since 1998, exposing the false science behind genetic engineering and the 'hype, propaganda and spin' peddled by its proponents. The original site recently suffered a series of crippling cyber attacks, but is now in the process of being rebuilt.

www.gmwatch.eu

Independent Media Center

Born out of the WTO protests in 1999, IMC compiles reports from independent journalists and media organisations to offer alternative, non-biased, non-corporate news coverage and 'radical, accurate and passionate tellings of truth'. Through print, audio, photo and video, its open publishing ethos allows anyone to publish news from their own perspective.

www.indymedia.org

Lobby Watch

An offshoot of GM Watch, Lobby Watch tracks and reports on 'deceptive PR' in the genetic engineering debate, the 'independent' third parties – politicians, scientists, organisations – promoting GM foods. Its searchable online database of companies and lobbyists allows you to join the corporate and political dots.

www.lobbywatch.org

Karen

Winner of the EMAP Best Lifestyle Fanzine Award 2005, *Karen* is both a critique and comic condemnation of glossy lifestyle magazines and culture. 'Made out of the ordinary' by designer Karen Lubbock, the articles, interviews and quotes concern commonplace issues – bunions, butchers and moles – but create something profound.

www.karenmagazine.com

Mother Jones

A non-profit news organisation that prides itself on 'smart, fearless journalism'. Mother Jones has a bimonthly national magazine and a website that feature up-to-date news items and investigative reporting on politics, current affairs, environment and health.

www.motherjones.com

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Many readers will know that this edition of the *Ecologist* will be the last to be printed on paper. From now on, we will be putting all our energy into the website. There's no doubt many of our readers will be alarmed, or even horrified, but I want to explain why we're doing it, and why the *Ecologist* and the wider environmental movement will benefit.

Nobody really knows how the internet will impact on journalism, but it will unavoidably change the way news reaches us. Many magazines and newspapers are already preparing for a wholesale shift to the internet. Others have already made the move. Most are struggling to maintain their subscribers and advertising revenue.

I have always considered the internet to be a hugely valuable mechanism for delivering news and mobilising people around campaigns. There are the obvious environmental benefits of saving ink, paper and packaging. Nobody likes waste, and the fact that a substantial portion of every print run will end up being pulped has always made me uneasy.

But beyond that, the *Ecologist* was launched nearly 40 years ago to campaign; it was never set up as a business – indeed, it has lost money from the day it was launched in 1970, and will continue to lose money on the internet. Its purpose was to wake people up,

expose wrongdoing and campaign for change. The magazine has never wavered from those goals, and it never will, but the mechanism we have used to pursue them is no longer appropriate. Largely for emotional reasons, I have resisted moving the *Ecologist* online, but if we want to continue shaking things up then it is obvious we have to make that shift now.

Online our potential readership is limitless. If we get it right, we can reach millions. We can launch campaigns and see immediate results. We can bring news to people when it matters – now. The format will change, of course, but we won't lose anything that has made the *Ecologist* vital and relevant. We will continue to provide the best analysis and the best investigations. We will continue to provoke, fearlessly, wherever that's needed.

An expanding horizon

By contrast, in print, our readership is necessarily limited. We will always aspire to reach millions, but that will never happen. It's true that every now and again we have touched a nerve, and the magazine has sold like hot cakes. The famous *Blueprint for Survival*, for instance, which was published 35 years ago: that special edition triggered the formation of People Party, later renamed the Ecology Party and finally the Green Party. *Blueprint for Survival* went on to sell more than 750,000 copies.

It happened again more recently when we dedicated an entire edition to exposing the

ugly truth about the highly litigious biotech giant Monsanto. The edition was a direct response to adverts posted by Monsanto in magazines and papers throughout Europe declaring that: 'Biotechnology is a matter of opinions; Monsanto believes you should hear all of them'. After decades of printing highly controversial editions, our printer mysteriously chose to pulp rather than release this particular issue. We found a new printer but the major wholesalers then refused to distribute it. We thought we were sunk, but it went on to become the biggest-selling edition in the magazine's history.

In normal times, however, our circulation has been a steady 20,000. If we were a standard business, perhaps we would cut a few costs, crop a few pages, loosen our advertising policy and turn a small profit. But that's not the purpose of the magazine. We want to inform, inspire, convert the undecided and provoke.

That's not to say our readers aren't valued. Your loyalty is more appreciated than you can possibly know. If we have been able to launch useful campaigns in the past, it has been because of your commitment. If the



Almost forty years after its first print run, the magazine's director, **Zac Goldsmith**, explains why relaunching on the internet will extend the *Ecologist's* influence further than ever

WHY THE ECOLOGIST HAS GONE ONLINE

COMMENT

Ecologist brand has gravitas, it's because you have given it gravitas. But there's little you'll gain from the print magazine that you can't gain from an online version. There will be no dumbing down.

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Zac Goldsmith is Director of the *Ecologist*



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News Analysis

Palm Oil: Will it be the achilles heel of REDD?

By Mark Anslow 19/06/09

It's in everything: cakes, ready-meals, face-cream - you name it, and it probably has palm oil in it. Attempts to manage palm oil plantations sustainable seem to have fallen at the first hurdle, and now reports say it will still threaten rainforests.

Pesticides: The worst are banned, but the risk remains

Food Security: Do we need to overhaul the Bretton Woods Institutions?

Sweeteners: They're part of every fad diet, but what happens when we flush?

Investigations

Where do we go from here?

By the Ecologist 19/06/09

In 1972 the Ecologist published A Blueprint for Survival, which went on to sell more than one million copies. In our final print edition, we point the way to the individuals, groups and organisations working towards a better world.

Inner change

By Nick Kettles 17/06/09

If we want to change the world, do we need to change the way we think first? A string of thinkers has suggested that an 'egocentric' view of the world is not only wrong, but misguided. So what does it take to switch to an 'ecocentric' track?

Dioxin Dorms: why I can't give up on New

By Eric Francis Coppolino 19/03/09

A transformer fire in 1991 saw the state college in New Paltz heavily contaminated with PCBs and their byproducts. Yet soon, students were back in the building. After endless articles and phone calls to draw attention to the case, journalist Eric Francis Coppolino explains why he won't give up.

Blogs & Comments

Local food can and will make a difference

By Rosie Boycott 25/06/09

When London mayor Boris Johnson appointed me food adviser in 2008, many people scoffed at the idea that food could be grown in the capital. But it can - in nooks and crannies, on rooftops and disused railway banks...

Clean coal cop-out: Ed Miliband may sound good, says Joss Garman, but is he?

A people's post office it ain't: Molly Scott Cato says the new PO is a carbon crime

Materialism got us into this mess, say... now think differently

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Green Living

How do you define 'unnecessary travel'?

By Matilda Lee 19/06/09

As I write, I'm 36,000 feet above the Atlantic Ocean on a Boeing 747 airplane. Hardly moral ground from which to argue against personal air travel - so how do we define what's 'necessary' travel?

One man and his boat

By Paul Miles 01/06/09

Cowslips, forget-me-nots and violets are in full bloom along the towpath and rough winds do, indeed, shake the darling buds of May, so that the water's surface is covered with petals. I'm heading south.

How To: Have the most ethical BBQ

By Andy Hamilton 09/06/09

Throw another shrimp on the barbie... No wait - not shrimp! Or beef! And no firefighters... Andy Hamilton helps to pick through the ecological mire that is hosting an ethical summer barbecue.

Take Action

Local Hero; Lady Cranbrook

By Kate Eshelby 08/06/09

She has fought off a Tesco, led a local food revival, and champions rural enterprise. Oh, and she's seventy years old. Lady Cranbrook, Kate Eshelby finds, is no ordinary member of the aristocracy.

Campaign: Meat-Free Mondays - Paul McCartney

Competition: Enter your great green idea into the Postcode Lottery

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Reviews

The Challenge for Africa

By Will Bugler 19/06/09

Legendary African environmental campaigner Wangari Maathai has found time in between being an international stateswoman to map out a blueprint for a sustainable Africa.

Idle Parent: Tom Hodgkinson's latest book says play has

English Journeys: A compendium of artistic responses to Blighty...

The Wild Life: Former columnist Fergus Drennan on food foraging

A Blueprint for Safer Planet: Lord Nick Stern lays it on thick

Calendar

Radical Nature exhibition

By Laura Sevier 19/06/09

Architecture for a Changing Planet 1969-2009 is the first exhibition to bring together key artists and architects across different generations, from the 1960s until now, who have tried to address creatively our changing environment and climate change.

Festival: 2000 Trees Festival, 17th - 18th July

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Festival: National Cherry Festival, 11th - 12th July

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Dioxin Dorms: Why I Can't Give Up On New Paltz

When PCB transformers exploded in a New York university in 1991, contaminating the campus with dioxins, it set **Eric Francis Coppelino** on the path to becoming an environmental journalist. Here he explains why he's still telling the story 18 years later – and why the authorities are still refusing to listen

Joe Ramos, interim dean of fine and performing arts at the state college in New Paltz, New York, hung up on me – terminated the call, as he politely put it – just before replacing the handset.

A relatively new arrival, he had never heard that Parker Theater, where his students study and perform, was contaminated with PCBs and dioxins after a transformer explosion in December 1991. This gives an idea of how quiet it's kept on campus, how taboo a subject it is. So, I explained to him the history of the incident. I described the theatre, wrapped in plastic sheeting for weeks after the explosion so that rainwater would not spread the toxins further into the environment. I described the pipes freezing and bursting in January 1992 during the early phase of the cleanup, and the hundreds of toxic waste barrels that were used to collect the contaminated water.

I told him I didn't know whether the theatre's costume collection had been thrown

out after the building fogged over with dioxin- and furan-laced smoke, or whether students were still performing in clothing that could never be cleaned and only be tested by being destroyed. I explained how PCB smoke works its way into crawl spaces, above hung ceilings and into pipe chases, and how, once the contamination has seeped in everywhere, it verges on impossible to get a building clean.

And I assured the dean that his bosses and their bosses would give him a very different story: a blanket reassurance of safety and the usual line that I am the one who has a problem.

He was angry. I wasn't surprised.

I was nervous, and angry, and emotional, which did surprise me. After covering PCBs and dioxins for nearly two decades I thought nothing could shake me, but recently the issue had become personal. Now I was friends with someone who was about to enter the theatre department; a talented, fragile young

woman who would be one of the vulnerable.

New Paltz excels in one area, the arts. Getting into this programme was an achievement for her. She deserved this, and she deserved a lot better. Given the choice, I told her, it's better to delay school by one year than get leukaemia or endometriosis. After she went I picked up the phone.

Psychology of a cover-up

Having hung up on me, threatening to check my journalistic credentials without even taking my name or phone number, I rang Dean Ramos's secretary to pass along my contact information. While I had her attention, I explained the issue.

There are not a lot of people on the New Paltz campus who will speak to me, and I've heard that professors are concerned about the theatre, but are also afraid even to be seen with me, fearing for their jobs. I told her about the parents who on opening day, having heard about the contaminated dormitories, leave their sons and daughters on campus without asking questions. I told her about the people who call me to find out whether their brain cancer, leukaemia or endocrine disease has come from their time attending the college, five or 10 years after the fact.

Hearing about the issue, students are afraid

'People call me to find out whether their cancer or endocrine disease has come from their time at the college'



PHOTOGRAPH: GETTY IMAGES

to tell their parents – my friend said even hers would be angry to hear about it. Angry at whom? At her? At me? I've rarely heard a parent get angry at a campus administration that is 100 per cent responsible for the lives of its students, under an old common law principle called *in loco parentis*.

I mentioned to the secretary how the college administration had called the police on me so many times for reporting on campus it had become a running joke between me and the cops.

'Your campus needs psychologists,' I told her, 'not toxicologists, to figure out why this is happening.'

Hormonally yours...

It is often said that a university is a microcosm of the world. If this is true, we can get a good idea why environmental issues are still only a boutique news item, despite the general contamination of the ecosphere, and the fact we all know toxic chemicals are bad for us.

By general contamination, I am referring to hormonally active toxins, which range from heavy metals to plasticisers to dioxins and PCBs. Our society is awash with these substances, which act like hormones, scrambling the body's signals, compromising the immune system and damaging the genetic

code. By awash, I mean present in every breath of air and nearly every bite of food.

The issue is simply too big for most mortals to grasp. If what I've just said is true, and if we can't avoid the problem, then why think about it? It seems like worrying about a meteorite hitting you. To take on the story would be to go after the big one, the proverbial octopus: the scandal of industrial capitalism itself.

The core issue here is who profits from the contamination? And who is hurt by it? Polluters always make it sound as though the person taking on the poison benefits, whether through being able to live in a dorm, through some new technology or an economic

advantage. In truth, corporations and institutions deceive others in the name of a direct motive, which is profit and gain.

Those bent on getting the truth out are generally motivated by something else, like protecting the health of potential exposure victims. The gap between one mindset and the other can be the subject of a lot of psychic pain, because the two motives exist in different universes. It's necessary for the reporter to bridge the gap between people who are poisoning others for profit, and those who have no concept that such a thing as possible.

Both sides are likely to pretend you're insane, that you have no idea what you're talking about. To be an investigative reporter it's generally necessary to get accustomed to being called a nutter – no matter how much documentation you may have, and how solid or obvious your theory is.

It's easier when people put up a fight – there at least it's possible to express some energy. Being ignored is frustrating, but it has a tendency to turn to fuel; to convert a modest drive to get the story right, to expose the truth, into an obsession. Through doing the story there exists a drive to prove oneself right, and a deeper need to understand and expose the truth. To stay healthy it's necessary to remain in contact with that deeper motive.

Media toxicity

It is rare that anyone has the time or resources to do this properly. News organisations don't generally pay for this kind of reporting, and in the US, at any rate, they are often owned by the same corporations that create the toxins. 'If it bleeds, it leads' remains the silent motto of TV news. Toxin issues fit the three-day (or more often, three-hour) news cycle only if something specific is happening, such as an obvious toxic spill that makes pictures, which can be covered briefly and dismissed as cleaned up – if we hear about it at all.

In this context, there is really no way to report the contamination of the planet except in a documentary, a book or a specialised publication such as the *Ecologist*. Bill Moyers has told the story a couple of times, but then what exactly can you do about it? Stop eating and breathing?

Everyone 'understands' that the contamination of the planet is necessary to

sustain our industrialised, high-tech lifestyle. We at least accept that it's necessarily a consequence of our way of life. It is the company town mentality on a global scale. In a coal-mining town, everyone knows that the coal poisons the miners and puts food on the table. If the family wants to eat, it's presumed that somebody has to work in the mine.

If the truth about the toxins were known, or even investigated honestly, faculty, staff and administrators at New Paltz fear the campus would close, hundreds of jobs would be lost in an area with a thin economy and nothing would really be gained. After all, the world itself is contaminated – what harm is a little more going to do? Jobs are more important than what seems like an abstract issue.

This thought is used as a substitute for knowing or even being curious about the truth; that is, for figuring out how many people actually get sick from attending the campus, who exactly gets sick, and why.

A shared burden

I have often said that New Paltz is everywhere. How many people were poisoned manufacturing the computer I am typing on? It contains toxins, and when it is someday burned as hazardous waste will produce many more. There is a fear of hypocrisy even in raising the issue; on some level, everyone feels at least a little bit responsible because we Westerners enjoy so many unsustainable and dangerous luxuries that are seemingly poisonous to others more often than to us.

How many mobile phones have you owned? I don't even like the things, I barely use them and I've probably owned 10 since I first got one in 2000. It does not help that in order to switch carriers or move countries, you often have to purchase a new phone. Then comes the BlackBerry. Then comes the iPhone. Then a mountain of phones, chargers and handheld devices that would stand tall next to Etna.

We rely on these things to organise our lives and keep pace with the speed of technology. What exactly do you do when you find out that they are associated with brain tumours?

Fission for the truth

From the time Chernobyl blew in spring 1986, I knew I would be an environmental journalist. My main field was politics; I

'Being ignored has a tendency to turn to fuel; to convert a modest drive to get the story right into an obsession'



aspired to be the editorial page editor of a major newspaper, but with that incident the world changed – it was a different place. Radiation from a corner of the Ukraine was turning up around the globe; thousands of Ukrainian towns and cities were destroyed. French cheese and US milk would contain the same radiation from one nuclear reactor thousands of miles away.

After covering a diversity of industries as a trade journalist (beverage alcohol, towing, medical education), I ended up covering public higher education. As a grad student at New Paltz, I started a news service covering the state and city universities of New York.

I was busy doing this when, at 7.30am one Sunday in 1991, I was awakened by the sound

From one small town to everywhere...

New Paltz is a small village in the mountains of eastern New York State. Like most public institutions, its state college was outfitted with PCB electrical transformers in the 1950s and 1960s, ostensibly as safety equipment.

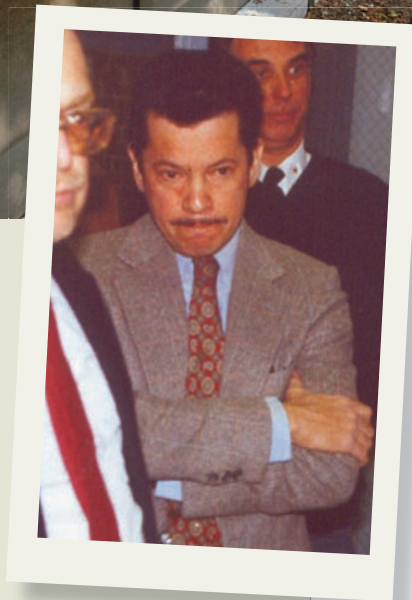
Manufacturers knew that when the PCB fluid breaks down from extended use, it forms a gas that can cause the whole transformer to explode, creating dioxins and furans, some of the most toxic chemicals known to science. On the morning of 29 December 1991, transformers in six campus buildings – Bliss, Capen, Gage and Scudder dormitories, Parker Theater and the Coykendall Science Building – burned or exploded as a result of an off-campus traffic accident that damaged an electrical utility pole. The resulting equipment failures spread toxins throughout the buildings, in the form of fumes, smoke, soot and dielectric fluid.

The campus was closed for holidays at the time, and only a dozen students and staff exposed during the evacuation of Capen Hall (where international students were being housed). Hazardous materials workers in level-A moonsuits – the highest level available, concealing the air tanks inside the protective garment – swarmed over the campus with sampling kits, in an effort to ascertain what had happened. Another 15 buildings were found to be contaminated.

Many agencies became involved: the health departments of the County of Ulster and the State of New York; the state Department of Environmental Conservation; the State University of New York central administration; the state Dormitory Authority and the college itself. Private contractors were brought in to help with the clean-up.



One month after the transformer incidents in New Paltz, two of the dormitories were declared safe and clean by the various agencies, and students were moved back in. No contamination tests were run on the buildings' heating, vents or electrical conduits. Many other shortcuts were taken and assumptions about safety made in the course of the clean-up.



Opposite from top: Barrels filled with toxic water; the explosion blew out the louvres in Bliss Hall; hazardous material workers; the 'staging area' where students had clothes removed before being taken to hospital

Above: Scudder dorm, barricaded and toxic

Left: Campus physician Dr Peter Haughton the day after the explosion

of sirens going past my girlfriend's house. When I went to work later that day there was a note on my desk: PCB transformers on New Paltz campus had exploded, contaminating several buildings. I knew enough to stay away. Within 24 hours I was in contact with Lois Gibbs, who had organised the evacuation of the Love Canal neighbourhood. I had talked to Ward Stone, the state wildlife pathologist and one of the most revered anti-toxin scientists in the world. Paul and Ellen Connett, longtime municipal waste incinerator activists, were feeding me information and contacts.

I didn't know I had stepped down the rabbit hole. If you had told me I would still be writing about the campus in 2009, I would have been stunned. My investigation took me back to 1929, when Swann Chemical began making chlorinated biphenyls, through the company's acquisition by Monsanto in 1935, and deep into a cover-up involving General Electric and Westinghouse. My work was published everywhere from *Sierra Magazine* to the *Las*

Vegas Sun and the *Village Voice*. The *New York Times* followed the saga of my coverage for a while, including a federal lawsuit against the administration for banning me from campus.

I won a first-place award for my coverage, and that night, when two of my older, wiser friends took me out to dinner to celebrate, I said I wanted to send it back to the state press association. They asked why. Because after writing hundreds of articles, I responded, the dorms and the theatre were still open; students were still being contaminated. They assured me that my coverage had resulted in a much more thorough clean-up, which (though badly done) was better than nothing. They reminded me I had forced New York State to spend more than \$50 million to make at least some effort to solve the problem.

So I kept going, focusing on the two dorms I feared were contaminated and which of all the buildings had been cleaned up least: Gage and Capen halls. In the back of my mind, though I couldn't focus on it, was the condition

of the theatre, which always worried me.

By this spring, when I was asked to write this article, I was ready to give up. Nobody on campus wanted to deal with the issue. Nobody wanted to hear about the problem and nobody was willing to take responsibility for the young students who were being contaminated. Campus officials worked for the state and if the state said it was safe, then by golly it was safe. And besides, we want our teaching jobs. I knew this was the company town mentality that was gradually poisoning the planet.

That's when I called Dean Joe Ramos, to make sure he knew and cared about my friend, who was about to enter one of his departments. When he hung up on me it felt like a direct invitation: to get back on to the story; to not give up; to keep fighting.

www.dioxindorms.com

Eric Francis Coppolino is an investigative journalist and editor of PlanetWaves.net

THE INNER REVOLUTION



To engage or to alienate? The way we communicate with others has an impact on how the environmental community and its message is perceived. Self-confidence, a positive outlook and ‘being the change’ is the way to get results, says Nick Kettles

Be the change you want to see in the world.’ For every pair of sneakers it sells, emblazoned with Gandhi’s immortal words, shoe

company TOMS will buy a pair of shoes for a shoeless child in the developing world. Such compassion in action helps ensure this most powerful rally cry amounts to more than just an overworked aphorism on a postcard, button badge, t-shirt or tattoo.

But how often do we take the time to actually consider the real implications of what Gandhi meant?

Is it possible that what he really meant was not only to act in the direction of our dreams, but also to consider that it’s who we are – who we are being – when we act that actually creates the conditions in which a better society can grow? If so then we must by default also consider which parts of the environmental movement itself represent the change we want to see in the world.

To what extent does the embittered vengefulness of some globalisation protesters, whose violence steals the headlines and skews the public image of a movement otherwise committed to non-violence, reflect the change we want to see? Not to mention the environmental campaigners who still so often describe their struggle in the discourse of war, where battle lines must be drawn between good guys and hated vested interests to be vanquished, in service of rescuing the fair maiden, Mother Earth.

There’s no doubt that it’s better to live in a society where people are awake and taking action rather than inert and unconscious, but the ability of any movement to define itself – or indeed, be defined by non-participants – by its conduct determines its ability to engage or to alienate.

Are we really at war (trying to force others to agree to our values) or is the environmental and sustainability movement part of a much larger shift in consciousness, one that also embraces our inner lives, the ability to self-manage our emotions, align our actions with heartfelt values, and form authentic and lasting relationships with others?

As Satish Kumar, founder of Schumacher

College and editor of *Resurgence* magazine, succinctly puts it: ‘Many environmentalists are just focusing on outer change, and outer change is only one of two legs – we have to walk on two’.

James Thornton, CEO of law firm Client Earth, is more pointed in his view. He believes that without addressing the internal pain and suffering that created this external mess in the first place, we’ll just find something new to project our malaise on. ‘Without making the internal switch, it’s going to be difficult to make any outer change we are seeking permanent,’ he says.

Cultural creatives

Some hardened greens who have been committed to the cause for a long time may dismiss this literal reading of Gandhi as just a bunch of hippy nonsense; the fringes of the green movement exploring the acausal, quantum relationship between our inner and outer worlds. And yet it might behoove them to consider the growing number of people who recognise that the key to creating and maintaining the sustainable society we want to see might just lie within.

Narrowing the gap between inner and outer self means much more than paying lip service to the ideals of social justice, while relying on the ‘them’ of governments to change.

Indeed, at the turn of the millennium, Drs Paul Ray and Sherry Ruth Anderson coined a new phrase to describe a growing group of people in the West. They called them ‘cultural creatives’ – people who combine a serious concern for their inner life with a strong passion for social activism.

In researching this group they found cultural creatives cared deeply about the destruction of nature; were willing to pay higher taxes or spend more money for legitimate green goods, but at the same time

also had an intense interest in spiritual and psychological development; in the importance of maintaining relationships, and in helping others to develop their unique gifts. Estimates suggest this group of people amounts to well over 130 million in the US and Europe.

It is not just that cultural creatives understand the problems we face; they also recognise that an interest in personal development can be put in service of creating a more sustainable society. Self and society, they believe, are not separate interests, but intimately entwined.

Likewise, in his 2008 book *Karma Queens, Geek Gods and Innerpreneurs*, marketing writer Ron Rentel identifies a cultural creative subculture in business he calls ‘innerpreneurs’. They possess, he says, the same drive and business acumen as entrepreneurs, but instead use their business to fulfil their potential and create social change rather than simply to make money.

Change from the inside out

Much of what’s been happening in the green movement to date has focused on ‘problem definition’ and explication, both of which are essential and necessary steps. To the cultural creative, however, who has already decided to focus on the positive, the excessive focus on the doomsday scenario of what will happen if we don’t take action can be as alienating as it is to the average climate-change denier.

As Michael Braungart, co-author of *Cradle to Cradle*, says: ‘For years environmentalists have invited us to think about the environment from a guilt perspective. Being told to reduce our carbon footprint is like saying “it’s better if I’m not here”. Guilt-management has turned into an obsession for eco-efficiency’.

A lot of environmental NGOs are already reaching this ontological edge, according to David Key of Footprint Consulting and WWF

‘To what extent does the embittered vengefulness of some protesters reflect the change we want to see?’

An interconnection with nature

For more than 30 years, deep ecology, first articulated by writers such as Arne Naess, has challenged so-called shallow environmentalism to invite people to consider themselves as much a part of nature as any 'wildlife'.

Satish Kumar, says the implications of such a shift are fundamental: 'It just takes one letter to move from egocentric – with an individual worldview, where I am separate from you, and my need is more important than yours – to ecocentric, with a relational worldview, where my comfort doesn't come at the expense of another'.

Eco-psychologist Joanna Macy claims that our pain and despair for the world is in fact evidence of our interconnectedness in the web of life, and hence our power to act on its behalf and take part in its healing.

Deep ecology, of course, requires a fundamental shift in the way we view nature, from a more paternalistic view as something to be saved to accepting it as our 'teacher'. This might be troubling to some who doubt the leading-edge science deep ecologists cite to prove our a-causal relationship with the world.

And yet David Key of Footprint Consulting says the purpose of the Natural Change project he developed with WWF is to invite people to have their epiphany with nature first, so they no longer need to be browbeaten with science.

'Our premise is that time in nature, in solitude for a significant period of time, can help to knock the egoic self off orbit,' he says. 'Through contact with the wild many people experience a shift of perspective that can be profoundly transpersonal, and results in a significant increase in their enthusiasm for change.'

Clearly, there's not enough wilderness for all six billion of us to have this kind of experience, but where the focus is on working with key change agents the impact can be profound.

Others, such as The Wild Peak, a transformational coaching company, are offering a similar process to the corporate world. They assert that true creativity and transformation rarely occur in the office, where it's all-too-easy to remain consumed by the day-to-day concerns of meeting targets and protecting your position. Instead, they argue, it's in nature that business leaders can discover the reverence and integrity required to align business objectives with planetary needs.

'Taking care of our own inner needs is an essential step in reframing the way we relate to others'

From carbon footprints to contribution footprints

Dr David Ellis is one of the founding members of Transition Cambridge. He left his high-powered parliamentary lobbying work when he realised the burn-out he felt was antithetical to the sustainable society he wanted to create. 'I knew I had to engage in a way that nourished me,' he says.

David is one of many who believes that how we engage with environmental issues is just as critical as what we do. The premise is that we cannot ask governments to adopt clean, renewable energy if we are still fuelling ourselves with resentment, anger and exhaustion; we cannot expect to create a world we want to live in until we also become the kind of people others want to live with.

As coaches and other psychology of change experts, we are supporting individuals with these internal shifts. My work centres on alerting individuals to their own significance in these significant times, and helping them to find and act upon what I call our unique 'contribution footprint'. Fundamentally, this approach holds that the self is the solution.

When Penny Askew began having coaching, environmental issues weren't on her agenda. She simply knew she was stuck in a safe zone, unhappy and unfulfilled, and that something needed to change: 'I wasn't engaging with anything. Then I had someone who helped me believe that I was capable of doing the things I dreamed of, and that if I did follow my passion it could and would make a difference.'

She says it was crucial that the other person didn't judge or criticise her existing choices, but encouraged her to see her own

potential. This emboldened her to connect with Transition Cambridge and with her local carbon-reduction group, becoming involved with their awareness-raising activities. 'I've gone from feeling alone and full of hopelessness to being confident I can give absolutely anything a go,' she says. 'And I do!'

When individuals are encouraged their gifts are of benefit to their community, they tentatively step forward; in return, their action and engagement bolster self-esteem. The local format of a Transition Town supports individuals in finding and following their contribution footprint because it repositions us as one in a few thousand, not one in six billion. It depends on each person's unique response as one part of a collective jigsaw. It also enables us physically to experience our contribution, making a difference that quiets those internal demons that tell us we are not important and cannot effect change.

It becomes an antidote to low self-esteem and depression, as Nicky Smith found: 'I was circling round in my little world, feeling boxed in. My focus was on what I could take from life that would make me better. My experience shifted when I changed my perspective and adopted new questions: What purpose can I be? What can I do, what can I give? What talents and strengths do I have that enable something bigger than myself to take place? The more I did that, the better I felt. It was an escape from the narrow parameters I'd set.'

There are great challenges when we put the self so squarely in the equation. We are more visible and more vulnerable. We run the risk

of despair they feel about the issues we collectively face. For others, more explorative personal development work might appeal.

initiative Natural Change. 'They are realising that presenting frightening images of ecocide to induce shock and awe in viewers is having a net negative effect on people's environmental behaviour,' he says. 'They either become numbed out and immune to new information, oversensitised and reactionary, or take the middle road of "what can I do?" indifference.'

Perhaps cultural creatives' focus on the role of personal development as an agent of change might just offer a third way for engaging the less motivated. Just how many more people would we inspire if being the change we want to see were actually a pleasant and fulfilling experience?

But what exactly does inner change mean?

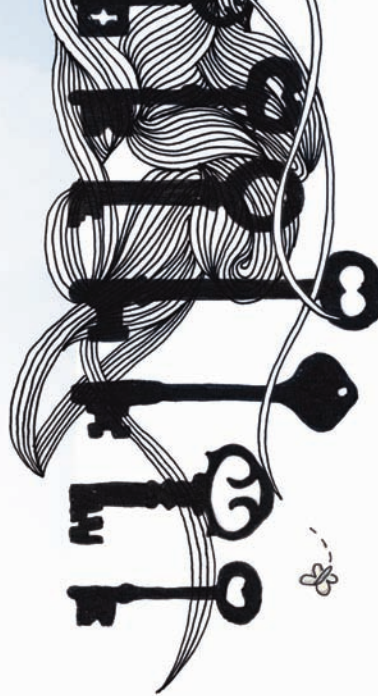
For some, embracing the idea of 'voluntary simplicity' through actions such as making their own bread can nourish the self sufficiently to help them detach from the

despair they feel about the issues we collectively face. For others, more explorative personal development work might appeal.

The human potential movement, which has tapped our yearning for more meaningful and fulfilled lives, includes a vast range of therapies and learning resources. These focus on everything from addressing low self-esteem and despair to forming better working relationships with others, through to so-called positive psychology, focused on developing our hidden potential and creating a more authentic expression of who we are, and what we do in the world.

It's what you do with these tools that matters, of course. Such techniques can, and often are, used in service of grossly materialist objectives completely incongruent with sustainable living.

But not always. Human potential has become an integral part of the Transition Towns movement's 'toolkit for change'. As Corrina Gordon-Barnes' work as a certified professional co-active coach within Transition Cambridge shows, this can help people move beyond despair to recognise their own significance (see box, above). The result of such work is that people want to increase



of offering skills and ideas and having them rejected or laughed at. This is where specialist support can make the difference between taking the contribution footprint path or not.

It helped Jacky Sutton-Adam clearly to articulate that she was developing her foraging venture, WildFoodie, as a means of following her passion, not merely achieving a particular outcome. 'This perspective means I can continuously try out new ideas, and when things don't go to plan I don't throw out the baby with the bathwater,' she says. 'I regroup, reprioritise based on what is most important to me, and remember this is about offering something that nourishes me and others.'

This is the contribution footprint journey

we each can take. If we do, we are asked to confront our deep fear: that we don't matter; and our great longing: that we do. This inner transition requires us to be braver, yet there is less of a fight. We're no longer trying to change the outside by shouting about it or scrubbing at the mirror to create a different reflection. Our enemies are those inside that swallow our self-esteem and paralyse us. It takes strength to dismantle self-imposed limitations, courage to say, 'I matter'. Here in Cambridge, as elsewhere, individuals are having a meaningful impact on the world as a result of finding both.

Corrina Gordon-Barnes is a certified professional coach. www.youinspireme.co.uk

their contribution, with as much zest and enthusiasm as they might otherwise seek to reduce their carbon footprint.

The ecology of relationships

Taking care of our own inner needs is also an essential step in reframing the way we relate to others, including how we view the people we are trying to hold to account.

'In more than 29 years of working in the environmental movement, I have found that at their core, environmental problems are essentially problems of understanding,' says James Thornton of Client Earth. 'As a younger lawyer, it was a surprise to meet the executives of the companies I was suing and find they were all nice people. They were not the enemy.'

Louise Romain, a certified trainer of non-violent communication, says our favoured method of blaming and criticising simply doesn't work. 'Blame and criticism is a well-exercised human muscle, and the more we use it, the more it perpetuates the defence and self-justification we are trying to break down,' she says. 'A judgement is a tragic expression of someone's hidden needs; tragic because it stifles the actual human connection we need for real dialogue to happen.'

'I'm convinced, if environmental activists themselves got enough support for their own pain and despair about the current crisis, and having been fully heard themselves, that they could come from the still and powerful place of really listening and connecting to the person they are trying to hold accountable.'

If non-violent communication can succeed in bringing Rwanda's Hutus and Tutsis to a place of understanding, surely it can play a role in helping mediate the conflict of interests at the heart of climate change.

But can you really be empathic and still hold someone accountable?

It's always going to be easier to empathise with a company whose products you admire.

For more information

- The Center for Nonviolent Communication www.cnvc.org
- www.footprintconsulting.org
- www.naturalchange.org.uk
- www.thewildpeak.com
- www.centerforrightrelationship.com
- www.thecoaches.com

For example, when Greenpeace held the computer industry accountable for creating so much electronic toxic waste, it specifically appealed to Apple, first by acknowledging the company for what Greenpeace loved about its designs. It shifted tack from shaming and blaming, and instead challenged Apple to lead the industry as an innovator. It resulted in Steve Jobs' 'A Greener Apple' policy announcement, which, although still far from perfect, represented a big step forward.

Indeed, it's important not to confuse empathy and understanding why someone acts a certain way with a moral endorsement of their actions. The shift is simply one of perspective, from a punitive to a more restorative one. This is the same humanistic view adopted by Earth Jurisprudence or Wild Law. It's not a process of attrition, but a process of educating a complex institution in better conduct through legal discourse.

A shift in narrative

The human story is constantly evolving, and today, with the environmental movement so at risk of being marginalised as extremists by governments and security forces, we have the opportunity to change tack about the kind of narrative we want to tell.

This is not about being a Pollyanna – indeed, any attempt to use wellbeing as a replacement for economic growth as a new measure of success, must be viewed with suspicion, lest it mutates into some kind of Orwellian measure of the nation's national average happiness, broadcast daily like a weather forecast. As Dr Nick Baylis, author of *The Rough Guide to Happiness*, says, such boundless optimism can easily backfire: 'The "just-be-positive" rhetoric is fast creating a culture of "just do it, to hell with the consequences!" junkies.'

Nor should it be mistaken for an invitation to waste precious time indulging in navel-gazing while the ice caps continue to melt. The shift in narrative we are talking about here is what happens to the environmental movement when we reframe our ideas of happiness and self-worth based on our contribution and ability to connect with others.

The environmental movement no longer becomes consumed by its basic survival needs – the lower levels of Maslow's hierarchy of needs – and instead provides an invitation to experience the role a sustainable society could play in living a more fulfilled life. We deepen people's engagement by offering them an opportunity to live a future-self now, a future-self that offers a deeper acceptance of our humanity. Perhaps all of it, in all its richly complex, deeply feeling, brilliant beauty.

Nick Kettles is a freelance writer, consultant and coach
www.visionarybrilliance.co.uk

Radical Art

A new exhibition explores the symbiotic relationship between art, architecture and environmentalism. **Will Bulger** discovers a creative response – and creative answers – to a changing world



The symbiotic relationship between architecture, art and nature is one that stretches back for millennia. From the Egyptians mapping the location of the pyramids using the stars, to the mysteries of Stonehenge, humans have constantly been challenged and inspired by the natural world. *Radical Nature: Art and Architecture for a Changing Planet 1969-2009* is a new exhibition at London's Barbican Centre that tells the story of the relationship between architecture, art and the environment from 1960 to the present day.

The past 40 years have seen problems of environmental degradation and climate





Clockwise from left:

Agnes Denes, *Wheatfield – A Confrontation* (1982). Two acres of wheat planted and harvested in Battery Park landfill, Manhattan, New York

A photograph of toppled palms from the Center for Land Use Interpretation photo archive (1997)

Ant Farm, *House of the Century* (1971-73). A collective of critical artists and experimental architects that produced works in the 1970s on the 'architectural fringe'

Richard Buckminster Fuller and Shoji Sadao, project for *Floating Cloud Structures (Cloud Nine)*, circa 1960. Spherical clouds house floating cities in Buckminster Fuller's creative response to population growth





Top: Hans Haacke, *Monument to Beach Pollution* (1970). Anti-formalist expression of environmental concern using rubbish collected from a Spanish beach

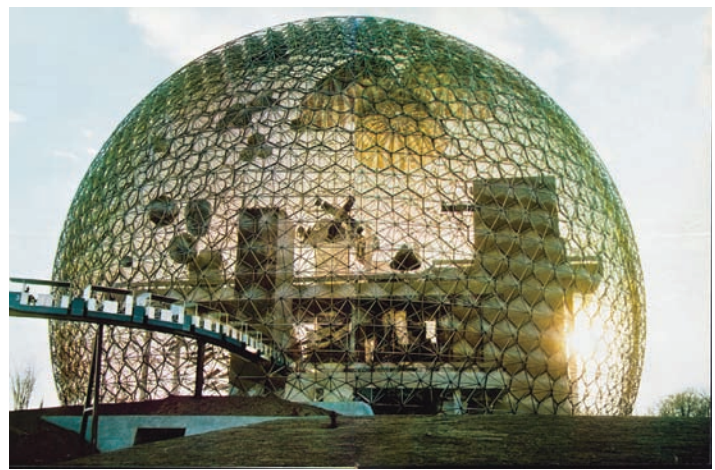
Opposite top: Heather and Ivan Morison, *I Am So Sorry, Goodbye* (2008). 'Escape Vehicle No. 4' was built using felled trees in Tatton Park, Cheshire



Left: Henrik Häkansson, *Fallen Forest* (2006). Nature displaced, flipped round and brought inside from outside

Opposite bottom: Mierle Laderman Ukeles, *Social Mirror* (1983). A crowd reflected in the glittering flank of the New York sanitation department's parade vehicle, the 'mirror truck'

Below: Richard Buckminster Fuller, *US Pavilion for Expo '67* (1967). A giant dome, 250ft in diameter





change rise to become some of the most pressing issues facing mankind. By drawing on the concepts that have emerged from environmentalism, *Radical Nature* shows how this has been reflected in increasingly urgent artistic responses.

The variety of mediums used by 25 artists spanning generations conspire to turn the gallery space into a fantastical landscape that challenges as it inspires. Works by 2005 Turner-Prize-winner Simon Starling will be shown alongside *Full Farm* (1972), by Newton Harrison and Heather Mayer Harrison, where fruit and vegetables grow in an indoor farm.

How humans engage with the environment is a concept that remains constant throughout, but the diversity of approaches to the subject matter is staggering. Richard Buckminster Fuller's visionary 1960s concept of 'Spaceship Earth' took physical shape in his iconic geodesic dome – a sphere able to sustain its own weight at any size, a version of which will be created inside the gallery. Buckminster Fuller's work shares the space with pieces



ART

that it has directly inspired. One such piece is Tomás Saraceno's *Flying Garden* (2006), a suspended bubble-shaped habitat on which *Tillandsia* plants are able to grow, receiving all the nutrients they need from the air.

Other artists explore the direct confrontation between the manmade and the natural world. Henrik Håkansson displaces nature and brings the outside in with *Fallen Forest* (2006), where a section of forest has been flipped on its side to grow horizontally. It contrasts with Agnes Denes' *Wheatfield – A Confrontation* (1982), which took nature to the heart of Manhattan by planting two acres of wheat in Battery Park landfill site.

The exhibition also features artists that use nature as an artistic material. One of the most prominent exponents of this is land-artist Robert Smithson. His extraordinary creation *Spiral Jetty* (1970), a 457m spiral path jutting into the Great Salt Lake in Utah, will be brought to life in the film of the same name. The film tells the piece's fascinating story from conception to construction, and of how the piece became submerged from view for almost three decades as water levels rose.

Mirroring the ideas shown in much of the art, the exhibition itself spills out from the Barbican and into the streets, where experimental architecture collective EXYZT will create a specially commissioned off-site



Robert Smithson, *Spiral Jetty* (1970)

piece. From the 15 July to 6 August they will turn a disused site into an urban summer oasis, complete with windmill.

A series of events will run alongside the exhibition, with talks from eco-artists Newton Harrison and Helen Mayer Harrison and guerrilla gardener Richard Reynolds

Will Bulger is a freelance journalist

More information

Radical Nature: Art and Architecture for a Changing Planet 1969-2009 will run 19 June-18 October at the Barbican Art Gallery, London. Entry £8, concessions £6. 0845 120 7550; www.barbican.org.uk/artgallery

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TAKE ACTION

CAMPAIGNS

LOCAL HERO

ACTIVISM

COMMUNITY

Want to do something to help? Get involved with these campaigns

Rooting for Bristol

Green is the new grey in Bristol. Community gardening co-operative Eastside Roots is renovating derelict land in the city to create vibrant green spaces and a valuable community resource.

Uniting local communities to transform the areas around Stapleton Road train station and the Trinity Centre, the group uses art, music and vegetables (a potent mix, we're sure you'll agree) to educate and inspire.

If you want to get involved, learn new skills and help make the city a more pleasant place in which to live, email nick@eastsideroots.org.uk or visit www.eastsideroots.org.uk

>> Paved With Bad Intentions

The Campaign for Better Transport (CBT) says that the Government is planning 90 road-building projects across England in the next five years. It estimates that the top 10 polluting projects will lead to the release of an additional 253,235 tonnes of CO₂ each year. CBT argues that the hundreds of millions of pounds spent on these roads will do nothing to ease congestion, and would be better spent on improving public transport infrastructure.

To send a signal to the Government that new roads are not the answer, CBT is focusing on a campaign to oppose a particularly ill-conceived proposal in Shrewsbury – and it wants your help.

The proposed road would run northwest of the historic town, damaging its economy and local biodiversity. It is predicted that this project alone would increase Shrewsbury's greenhouse gas emissions from transport by 13 per cent.

To oppose this road and other unnecessary proposals across the UK, see http://bettertransport.org.uk/take_action/shrewsbury-road

>> Meat-Free Mondays

Music legend and long-time vegetarian Paul McCartney, along with daughters Stella and Mary, is launching a new food campaign – Meat-Free Mondays – which encourages people to help slow climate change by having one meat-free day a week.

Most people understand that our food choices can influence our own health – for good or for bad – but increasing amounts of scientific data published over the past few years have shown that our food choices are also linked to the health of the environment.

Intensive livestock production is responsible for more climate-changing greenhouse gas emissions globally than transportation – as much as 18 per cent of emissions, as opposed to 13 per cent for transport – so there's a sound basis for joining the campaign, launching 15 June.

The Meat-Free Monday website – www.supportmfm.org – will feature useful tips and recipes, as well as provide a community of support and information for those who want to know more. The more people who join in, the more difference it can make.



€500,000 for Top Green Invention

If you've dreamt of taking your eco-innovation on to *Dragons' Den* but have felt Duncan Bannatyne et al might not be the right people to make your green idea a reality, this is the competition for you.

The Postcode Lottery Green Challenge is looking for inventive ideas to cut CO₂ emissions and protect the environment. Funded by the Dutch Postcode Lottery, the top prize is €500,000 to turn your vision into reality. Two runners-up will see their ideas funded to the tune of €100,000 each.

Last year's top prize went to Eben Bayer of the US for his all-natural insulation Greensulate™.

To enter the competition, visit www.greenchallenge.info – closing date 31 July 2009.

>> The (Air)Plot Thickens

Fancy owning a piece of real estate in the south-east but don't have a lot of cash to spare? Here's the opportunity of a lifetime to own a plot of land... though admittedly you'll be sharing it with 45,000 others.

In a bid to stop a third runway being built at Heathrow, Greenpeace has bought a piece of land in the middle of the proposed development. It's free to become a 'beneficial owner' of this allotment, which, despite being (quite literally) under the flight path, boasts excellent local amenities in the nearby village of Sipson.

Greenpeace is aiming for 100,000 'beneficial owners', and hopes that so many names on the land deed will delay the planning process long enough for the idea to be scrapped.

To take part in the 'Airplot' and help prevent Heathrow becoming the UK's biggest CO₂ emitter, sign up at www.airplot.org.uk

POWER TO THE PEOPLE

38 Degrees is a new organisation calling on people to sign up for a new law that will allow voters to 'recall' and sack disgraced MPs.

The organisers believe the campaign will provide a way to harness people power using rapid-response online campaigning techniques, in order to hold politicians and those in positions of power to account on a wide range of environmental, social justice and political issues. It has been inspired by the impact similar online campaigning communities have had in mobilising millions of people to effect political change – including MoveOn in the US, which helped sweep Barack Obama into the White House.

For more information and to sign up to the campaign, visit www.38degrees.org.uk



Paul Miles

MAN ON A BOAT

In the final instalment from Britain's historic waterways, the *Ecologist's* narrowboat correspondent finds a literal and metaphorical light at the end of the tunnel on the Grand Union canal

Cowslips, forget-me-nots and violets are in full bloom along the towpath, and rough winds do, indeed, shake the darling buds of May, so that the water's surface is covered with petals. I am on the Grand Union canal, slowly heading south from Leicester.

Recently, I had to leave the boat moored in its wild garden and take a train to London.

I saw more people in one minute at Euston than I had in the previous two weeks on 'the cut'. Everyone beetled about urgently, plugged in to personal worlds of sound, sipping coffees from cardboard cups. Commuters squeezed together deep underground then surged en masse towards the light of the next station. I was happy to get back to the canals and their even more historic infrastructure, where the only reference to velocity is the blue-flowering speedwell.

A sign at Foxton Locks, some 20 miles south of Leicester, tells me that it will take 58 hours' journey time and 102 locks before I'll reach the capital again. I plan to take two weeks at least. (It takes one hour and seven minutes by train from nearby Market Harborough.)

Foxton Locks is two impressive staircases of five locks each, which raise the boat 75ft (everything is imperial on the canals). They have been in use, more or less constantly, since they were built in the early 1800s. Their ingenious design and side reservoirs means

that as many as seven boats can travel through using only one lock-full of water (25,000 gallons.) Conservation of limited resources was an important consideration in 19th-century transport design, which is more than can be said for most of today's car industry.

The locks have outlasted the new technology designed to replace them. In 1900, an inclined plane boat-lift opened. It cost £37,000, approximately equivalent to £1 million today. Compared to the 45 minutes

'Conservation of limited resources was important in 19th-century transport design'

it takes to journey through the locks, the contraption carried boats uphill in just 12 minutes, in tanks of water, pulled by steel cables, powered by steam. There is a little museum at Foxton Locks, where there are black-and-white photographs showing the lift's engineer, Gordon Cale Thomas. Dressed in Panama hat, bow-tie and blazer, he smiles at the camera as he looks out of a steel dolly on the 1-in-4 slope. His image reminded me of Fitzcarraldo, attempting the impossible task of hauling a paddle-steamer through the Amazon. Unlike film director Werner Herzog's character, Thomas was successful in hauling boats over the hill, but his boat-lift only operated for 10 years before the canals finally lost out to the railways. The buildings were demolished and the machinery scrapped, and the slope became overgrown. Progress is always equated with speed, but sometimes it is slowness that endures.

Tunnel vision

Nearby Watford is a nexus where Roman road, canal, railway and motorway all come within a few metres of each other. As trains whiz by, traffic roars and, trumping them all, an airforce fighter jet breaks the sound barrier overhead, narrowboats chug slowly through the locks. The people steering them – live-aboards and holidaymakers – have time to stop and chat.

We discuss whether anyone has spotted the narrowboat featured on a handmade poster affixed to a telegraph pole. 'Stolen', it says, with pictures of a smart, new vessel and the distressed owner's name and contact number. The name of the boat? *Que sera sera*.

Those heading south have just come through Crick tunnel; nearly a mile long, it is a dark, dripping intestine of a monster that swallows you up and seems to take forever to digest you. There is no illumination of any kind in canal tunnels and, travelling at the grand speed of 3mph, the journey takes 20 minutes. In the middle of this Stygian subterranean passage the darkness is almost overwhelming. Alone, under the hill, with the throaty *putt-putt* of the engine and the dim light of my headlamp diffusely lighting the way, I sorely regret reading that this tunnel's roof has collapsed in the past.

Although I have been through tunnels much longer, never have I yearned for the passage to end with such ardour. It's a cliché I know, but now I realise the significance of the 'light at the end of the tunnel' like never before. It finally takes shape in the distance, a white arc in which I can make out some greenness. It becomes a tree and, behind that, what looks like the arch of an old brick bridge. A bird flies past. There is sunshine. Now there is enough daylight reflecting inwards to give texture to the dark, dripping arched brick walls. They no

longer seem menacing but beautiful, like the scales of a snake, turned outside in. When I emerge into the cool summer's day, I begin to wonder whether enduring dark tunnels may be worth it for the joy that comes with the daylight at the end. I've been far more than 6ft under and now I feel reborn, surrounded by nature, under the eternal weightlessness of our pale skin of sky. I see everything afresh – the sun sparkling on the water, the vivid green of grass and trees, a yellow wagtail bobbing chirpily, a mallard with her ducklings. I take a deep breath of fresh, clean air. I never experienced this euphoria arriving at an underground station.

Humankind has proved itself an ingenious species, criss-crossing the land, above and below, with arteries along which we travel at various speeds, carrying our loads. Over generations, we have achieved what our ancestors would consider impossible.

'Enduring dark tunnels may be worth it for the joy that comes with the daylight at the end'

Collectively, we are currently groping our way through a long, dark tunnel. Perhaps, when we come out the other side, with the help of our centuries of accrued technical expertise, we will enjoy the wonder of our planet with a deeper appreciation? Until then, the light at the end sometimes seems to get further away. I hope we make it.

Paul Miles is a freelance writer and photographer



Pictured: Foxton Locks, Leicester

Opposite page: Paul on Grand Union canal, near Wheedon, Northamptonshire



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Local Hero: Lady Cranbrook Food campaigner

A tireless crusader for rural revitalisation, **Kate Eshelby** meets the septuagenarian who beat Tesco out of town and is now at the heart of Suffolk's local food revival

A sea of eyes glint as I approach the impressive house ahead. All around are fields of sheep enveloped in night darkness. This is Great Glemham, East Suffolk, the home of Lady Cranbrook, who is hosting a special dinner. The guests are all local food producers who have come together with the food they grow or produce for a big feast. The room is effervescent with chat, the table spread with pan-fried pigeon breast and venison, pheasant and beef stew, and endless other dishes and desserts.

It is apt to be having a feast like this in a region rich in delicious locally grown food. The area around Glemham has an extraordinary diversity of independent food and farm shops, delis, farmers' markets and food producers.

And a considerable part of this is thanks to one remarkable lady – Lady Caroline Cranbrook.

Alde Valley, where Glemham sits, is famed as the place where planning permission for a new superstore was turned down, halting the Tesco-isation of Britain and making it one of the country's few superstore-free valleys, stretching from Ipswich to Lowestoft. As a result there has been an explosion of local foods, numerous small retailers flourish and a thriving local food economy exists – testament to what happens with no superstore.

Caroline, a tireless campaigner on rural issues, began her campaigning career in 1997 when Tesco applied to build yet another store outside Saxmundham, her nearest town. She successfully fought against this soulless juggernaut by extensively researching Tesco's

potential impact on local food producers, strengthening the district council's case that big supermarkets cripple local economies.

'I calculated that if the superstore had come to Saxmundham, seven market towns would have changed dramatically,' she says. 'I surveyed 81 food shops in 19 villages and seven towns around Saxmundham. Sixty-seven said they would have closed, and 300 producers would have been affected.'

'Supermarkets dismantle rural life. The country is becoming saturated and stores are opening where there is no retailing need for them. The impact of a large supermarket in a rural area goes beyond the high street.'

She passionately wants villages and market towns to retain their heart and individuality, and believes the survival of village life depends

Right: Richard Emsden of Salters Family Butchers

Below: Alby Clements sells fresh fish at his beach shack

Bottom: Paul Denny shares a joke with a colleague at the Wild Meat Company



pork, beef, game, cheeses (reviving Suffolk cheesemaking traditions), juices, honey, jams, organic produce, pies and smoked meats.

The following day I visit the Wild Meat Company, which sells seasonal wild meats sourced in Suffolk from local shoots. 'We supply farm shops and local food markets,' says Paul Denny, one of the joint owners, standing beside a crate of mallards. 'Big supermarkets screw you down for prices.'

Nearby Ed and Sally Turner breed Red Poll cattle on Alde Valley's water meadows, naturally hornless cows with striking rusty red fur and native to Suffolk. (The county also has its own sheep and the Suffolk Punch, the world's oldest breed of working horse.)

'Supermarkets give you no freedom. They dictate what they will buy, and hence what is produced,' Ed says. 'They encourage consumers to buy cheap meat from Brazil rather than

on local shops and a lively local food economy. 'The only time I ever go to the supermarket is to buy wine, yoghurt or white bread to feed the chickens – my three whites!' she laughs.

'Shops are interdependent: if you lose one, the effect escalates. If there are no small shops, food producers can't start up, which is a tragedy because innovation comes from individuals not big corporations.'

With no superstore, the area around Glemham has gone against the trend, and the number of food shops and local producers continues to grow. 'Retaining a variety of shops provides considerably more local jobs than a supermarket,' she says. Local shops are also the ears and eyes of a community, and often the only personal contact for old people.

Fighting the food fight

Lady Cranbrook cuts a striking figure: now in her seventies, she has a mass of grey hair piled on her head and is passionate about the countryside and its people. A Cambridge graduate, she was brought up in Lincolnshire and her parents worked for M16. She married the Earl of Cranbrook and for more than 20 years has farmed their 850-acre family farm at Great Glemham – with no prior farming experience. In her determined way she learned about it from reading books and talking to neighbouring farmers.

Her husband is away at a poetry festival in Borneo while I am at Glemham. The first few years of their married life were spent in West Malaysia, where Lord Cranbrook, a biologist, lectured in zoology and studied cave bats and swiftlets. 'We lived in the jungle and had tigers in the garden,' Caroline reminisces.

I first meet many of Suffolk's prevalent food producers at Lady Cranbrook's feast. 'Any food you can think of is grown here – you name it and Suffolk will produce it!' Caroline says defiantly. Certainly Suffolk's list seems endless:



PHOTOGRAPHS: KATE ESHELBY

local meat! He is worried that British farmers will not be able to keep producing meat if supermarkets continue to use companies supplying cheaper meat from abroad.

Alby Clements, also at the feast, can usually be found on Aldeburgh's shingle beach. Early morning he hauls his boat up on skids and then sells his fresh catch daily from outside his beach shack. He is one of the few surviving full-time inshore fishermen working from the beach. 'Supermarkets don't pay margins. We would have no business if we didn't sell on the beach,' Alby says, dressed in thick waterproofs.

'Supermarkets buy from trawlers, so their fish spend 12 days on a boat before reaching the shelves, whereas ours is fresh daily,' he says, sifting out sprat from his traditional drift net as sea gulls swell overhead. 'I like the personal contact with my customers, telling them about the different fish, and making them aware that some fish you shouldn't cook immediately; like mackerel, for example, which is better kept for a day.'

Also at the feast is Collete Strachan of MaryBelle and Suffolk Meadow, whose award-winning dairy products are used in many of the dishes. 'MaryBelle is an example of what can happen to a successful rural enterprise,' says Caroline. 'It started small, established a market, expanded and is now sold everywhere.'

All the producers have a story to tell about the benefits of not relying on supermarkets. Salters Family Butchers on Aldeburgh high street sources all its meat from local farms, and still hangs it for several weeks before selling, giving it a chance to mature on the bone, whereas supermarket meat is usually not hung. 'The art of butchery is disappearing,' explains owner Richard Emsden. 'Few young people are learning the skill. How meat is butchered and trimmed affects its flavour.'

High House Fruit Farm, a family business



Ed and Sally Turner with their Red Poll cattle



for 50 years, sells everything within a 12-mile radius of the farm. 'Supermarkets won't deal with individuals,' says owner Piers Pool. The farm sells a wide variety of high-quality fruit and juices; apples are its speciality, ranging from James Grieve to Blenheim Orange. 'Every eighth apple is a "king" apple, where the stalk rises to one side. They taste the same yet supermarkets won't accept them, which is such a waste. Supermarkets want fruit to follow a template, but nature doesn't do templates.'

The love of local has caught on in Suffolk, spreading to many of the pubs, hotels and restaurants, which sell locally sourced, home-cooked food. 'Our salad comes in with the dew still on,' says Clare Bruce-Clayton, owner of Lawson's Delicatessen in Aldeburgh. 'We cook everything to order, nothing is prepped and our scrambled eggs are from local chickens,' adds Paul Thomas, the owner of Farm Café.

Suffolk is full of market towns, many of which have kept their traditional weekly markets – a far cry from a trip to Tesco. Nearby Campsea Ashe is one of them, its market every Monday. 'Every market town in England used to have its own weekly livestock market, all on different days so drovers could move between markets,' Caroline explains. 'Supermarkets are killing these markets, which is sad because they are important for social contact and the exchanging of ideas.'

Campsea Ashe market still has food auctions, although no longer for livestock. In a dark, atmospheric shed, men hold up bunches of pheasants and the auctioneer shouts prices, surrounded by a crowd in tweed and caps. Rabbit feet and vivid orange partridge beaks poke out of numbered slots on antiquated wooden box shelves. 'Wild rabbit used to be for old women, but since young foodies have been highlighting them on television they are popular again,' one man jokes. I am surprised to find there is even a vegetable auction. 'I can buy a bunch of beetroot for 50p, whereas it is £1.50 in a supermarket,' one man says happily.

Pictured: Farmer Robert White with some of his organically reared cattle

Above: auctioning pheasant at Campsea Ashe market



The market also has a busy tearoom, all the women serving wear matching pinnies, and people queue up for fresh sausage rolls, scones and steaming milky coffee.

After battling supermarkets, Caroline moved to her next campaign – and won. She helped persuade the Government to change the method of charging for meat hygiene inspection in local abattoirs, helping once more to revive the rural economy. New EU rules on small abattoir inspections resulted in a huge leap in costs, threatening them with closure and consequently longer journeys for the animals. In 2006 she was awarded the OBE for services to the red meat industry, and she and Bob Kennard of the Soil Association were jointly nominated campaigners of the year by Radio 4's *Food Programme*.

Old houses such as Glemham were designed to be self-sufficient, and Caroline holds on to this ethos, keen to be productive rather than rely on supermarkets. She feeds homegrown food to her family, as well as to the estate's residents, and sells the rest to local retailers. The beautiful Georgian house still has an enormous 200-year-old walled kitchen garden, in which are grown the everyday and the exotic. Caroline's passion is unusual beans, chillis and peppers, heritage varieties collected in Eastern European and Mediterranean countries. She also keeps rare chicken breeds – Buff Cochins, Araucanas and Andalusians – selling her bountiful eggs locally.

Focus on localisation

Caroline's unflagging campaigning has ensured that she is heavily involved in nearly all rural and food issues of Suffolk, sitting on countless committees. She is a trustee of the Suffolk Punch Trust, President of Suffolk ACRE (Action with Communities in Rural England), vice-president of Suffolk CLA (Country Land & Business Association) and CPRE (Campaign to Protect Rural England), a patron of Tastes of Anglia and board member of East Anglia Food Links. Prince Charles called her 'the doughtiest fighter for good sense in agriculture', and she is a founder and president of Aldeburgh's Food and Drink Festival, regarded as one of the UK's best.

Her latest role is as chairman of Natural England's Eastern Region Grazing Forum.

'I want to halt the trend of farmers leaving livestock production in East Anglia, so we've set up an unusual dating agency connecting landowners with animal rearers who need grazing land,' Caroline smiles. 'Livestock and land are linked. Grazing animals play a crucial

'The Government needs to help small-scale producers. Britain needs to build self-reliance in food'

role in maintaining Britain's pastoral landscape.' Buying local beef and lamb means helping preserve the Suffolk landscape and wildlife reserves where these animals graze.

'Livestock are the landscape's gardeners; without them the land would become a tangled mess,' Caroline clarifies. Animals can graze on fragmented pieces of land unsuitable for arable farming, or on environmentally sensitive land. 'Although East Anglia is predominantly arable, it is important we have meat in our local economy.'

She is also currently working on the idea of one central food-distribution hub for East Suffolk. If it succeeds, the distribution of local food will be easier. 'At the moment some local restaurants go to London to pick up Suffolk produce, which is ridiculous. Many outlets find it difficult to find regular supplies of local food in sufficient quantity for their needs.' The distribution infrastructure of local markets has almost disappeared, so commercial growers and artisan producers can only supply local markets with difficulty. Caroline thinks interlinked distribution hubs are the future.

Her overriding belief is that food production and distribution need to become localised again. 'Supermarkets and our present food supply chain, dependent on long-distance sourcing and centralised distribution, are not sustainable. The Government needs to help small-scale producers instead of hindering them,' she says. 'Britain needs to build self-reliance in food, because further food and fuel shortages are predicted.'

With climate change, the high price of oil, continuing population increase and a world that consumes more food than it produces, the global food chain has certainly never looked less secure. 'Long-distance food supplies are becoming more fragile. We import a lot of our food from countries that are running out of water,' she continues.

Besides having less food miles attached, the benefits of local food are numerous. Food traceability makes it easier to eat safe and wholesome food. 'It is crucial that people become reconnected to the countryside and understand how food is produced. We have hunted and cooked food for years, but recently people have become separated from food production and knowing where their food comes from,' Caroline says. 'And we are no longer connected to the seasons.'

One common argument against local food is that it is more expensive – yet this is untrue. 'Fresh vegetables and meat bought in local shops or markets are often half the price of supermarkets,' Caroline says. 'And if you are on a small budget you can buy inexpensive cuts such as shin or skirt from the local butcher, which you can't buy in supermarkets.'

Kate Eshelby is a freelance photojournalist



Lady Caroline Cranbrook in her garden at Great Glemham, East Suffolk

PHOTOGRAPH: KATE ESHELBY



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How to... stop a supermarket opening in your area

Battling superstore monopolies needn't be a lone crusade. **Kate Eshelby** looks at some of the resources available, and gets tips from Tesco-killer Lady Cranbrook

Lady Caroline Cranbrook carried out her own independent surveys, which showed that there was no retail need in her area for a superstore. It is essential to show whether there is a requirement for a proposed superstore – if there is not it is a proven argument to use against one being built. One of the requirements of Planning Guidance (PPS6) is that a retailing need has to be established before planning permission can be granted.

In the case of the proposed superstore outside Saxmundham, the Suffolk district council employed consultants Hillier Parker to find out whether there was a retail demand for it. This was unusual because councils usually use the supermarket's assessment, which is obviously prone to bias. This is why independent research, such as Caroline's, is invaluable whether the local council is supporting or opposing a planning application for a superstore.

Caroline's research supported the Suffolk district council's work. Local authorities should properly have researched retailing policies within their local development plans – yet few do. Suffolk Coastal District Council is an exception.

Caroline went into every food shop in the area (81 shops) and carried out surveys asking the shop owners where they source their food from. By doing this she built up a database and a detailed 'map' showing the local food networks; illustrating how important local shops are.

'Tesco maintained that only one or two local shops would be affected by its arrival, but out of the 81 shops I interviewed only two were indifferent. The rest said their livelihoods would be at stake,' Caroline says.

When campaigning, however, it is important to be balanced and realistic in your argument. 'Supermarkets are not all bad. They drive up choice and standards,' Caroline says. 'The problem is that they have become

too powerful in relation to their suppliers and planning. We are now becoming saturated with superstores.'

Organisations that help campaign against prospective superstores...

■ **Campaign to Protect Rural England**
www.cpre.org.uk

The Real Choice report, published by CPRE and Plunkett Foundation, can be found on the CPRE website, and is based on Caroline's surveys. CPRE is also currently running an important nationwide project called Mapping Local Food Webs. For more information, see www.makinglocalfoodwork.co.uk

CPRE also has a planning help section, see www.planninghelp.org.uk/home

■ **Environmental Law Foundation**
www.elflaw.org

■ **Friends of the Earth**
www.foe.co.uk

Friends of the Earth has a supermarket campaigning section. In particular look at



Taking on the big boys: tips from Tescopoly

When fighting a superstore, Tescopoly recommends taking the following steps:

■ **ENGAGE IN THE PLANNING PROCESS**

You need to focus on the superstore's application and come up with solid objections. 'It will spoil our town' is not enough. Planners expect local residents to shout and get emotional, which counts for nothing. Members of the planning committee can only refuse an application if it contravenes planning policies. Caroline's response was rational common sense rather than an emotional response.

■ **PUBLICITY STUNTS** are good at raising awareness, but no more than that. On their own they will not achieve success. They should be a tool in your campaign, not the main component.

■ **GET HOLD OF THE STORE'S APPLICATION** and study it carefully. If you are a resident in the area you are entitled to a copy of the notification, which should give minimum details of what is proposed. A copy of the full application should be available for view in the planning department of your local authority and in your local library. Understanding the application is essential to your campaign.

■ **SET UP A CAMPAIGN GROUP** with other local residents. Be sure to include retailers and local businesses.

■ **KEY ARGUMENTS.** There are several that can work against a superstore. Looking at the impact of a superstore on local traders and producers is one – as Caroline did. Good local knowledge is essential. And read the town centre retail assessment.

■ **OTHER EFFECTIVE ARGUMENTS** include whether the superstore is of an appropriate scale, has adequate transport links and will create noise. Is it of a proportionate size in relation to retailing needs of the area? The size of the superstore will be based on the estimated number of weekly shopping visits. How does this number compare with the population of the local town?

■ **ANALYZE** the estimated traffic counts in the superstore's application. Crosschecking is crucial because superstores usually underestimate their figures. Independent car counts frequently show the proposed traffic numbers (and numbers of delivery lorries) to be higher. Measure roads to see if there is room for the proposed traffic changes. Traffic congestion is another valuable argument against a superstore.

■ **AIR QUALITY** Another factor to consider is whether the proposed superstore will affect the surrounding air quality. Speak to your local air-quality officer or environmental protection officer.

■ **STATUS CHECK** Is the intended superstore in a historic, green-belt or conservation area?

■ **PLANNING DOCUMENTS** A superstore application must fit with the planning documents, which local authorities have to create to guide the future shape of planning in the area. Does the proposed superstore in your area do this? Remember national Government policy is to promote the vitality of towns and protect them from out-of-town development. And community rights are one of the strongest arguments; they have the right to decide the future shape of their environment. No change from the specified site description can be made without first consulting the community.

■ **WRITE A TEMPLATE LETTER** once you have decided on reasons against a superstore.

Get other individuals in the town to sign it, including local retailers. Use your regional paper to highlight your case and deliver leaflets to residents explaining why a superstore in your area is not feasible.

■ **SUPPORT** Engage with your local MP, county councillor and district councillor.

■ **CONTACT** your local Federation of Small Businesses (www.fsb.org.uk) and Association of Convenience Stores (www.acs.org.uk). Both these organisations may be able to give you helpful advice.

For more advice, see www.tescopoly.org.uk

'shopping the bullies' and 'calling the shots.' They also run an annual event called 'Power Up' in Birmingham - a weekend of workshops and networking that helps empower people to make a difference where they live.

■ **New Economics Foundation**

www.neweconomics.org

NEF is an independent 'think-and-do' tank, helping local communities. It undertakes groundbreaking research, including reports *Clone Town Britain* and *Ghost Town Britain*.

■ **Planning Aid**

www.planningaid.rtpi.org.uk

■ **Tescopoly** www.tescopoly.org.uk

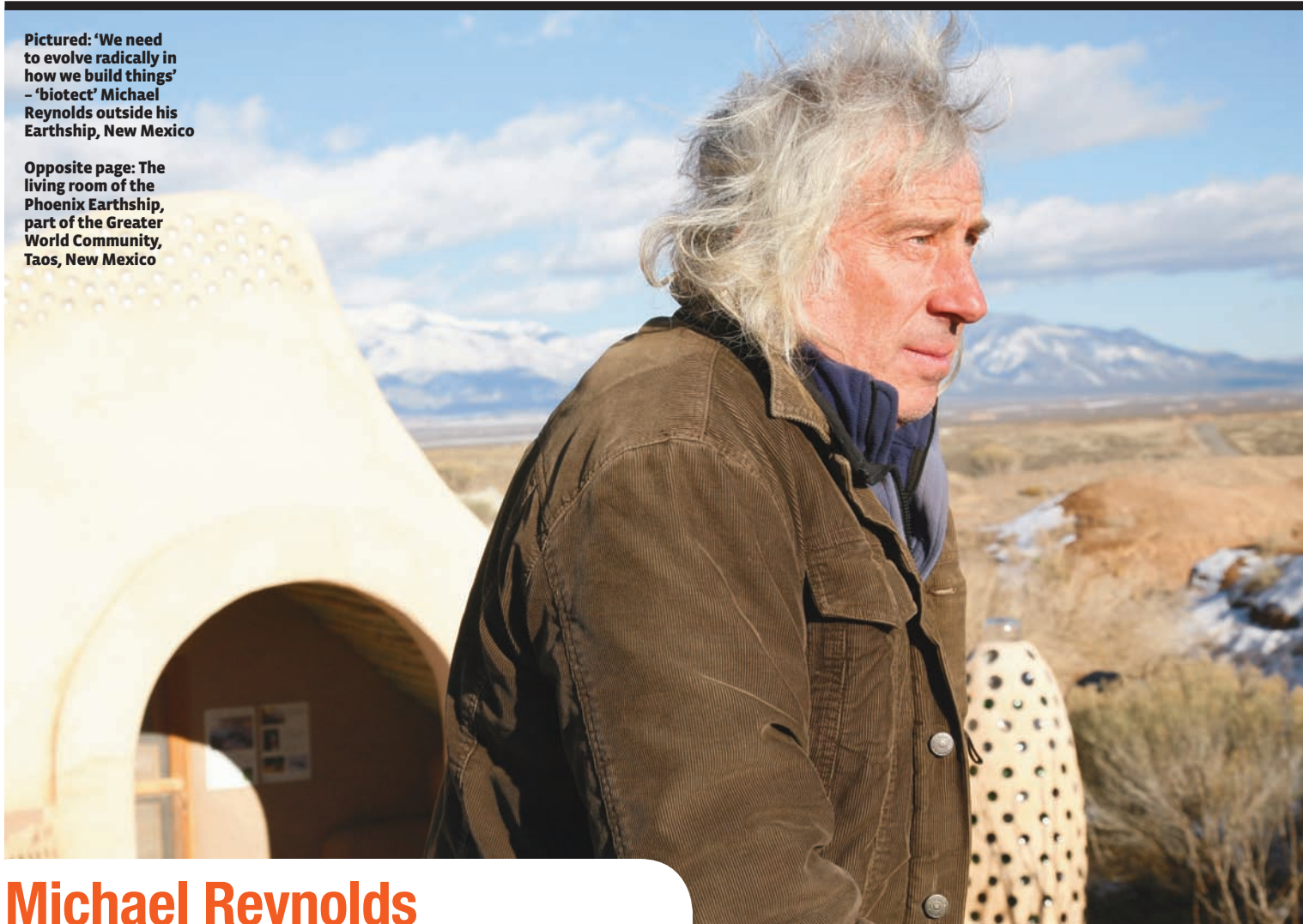
A website that has detailed downloadable guides on how to campaign against a superstore – see the 'campaign resources' section. It has a further mountain of information that is not on the site, so email info@tescopoly.org for more details.

Kate Eshelby is a freelance photojournalist



Pictured: 'We need to evolve radically in how we build things' – 'biotect' Michael Reynolds outside his Earthship, New Mexico

Opposite page: The living room of the Phoenix Earthship, part of the Greater World Community, Taos, New Mexico



Michael Reynolds

Garbage Warrior

They're made from recycled materials, entirely self-sufficient and are revolutionising the way we build. **Laura Sevier** meets the visionary 'biotect' behind Earthships

Question: what do you think of when you see a pile of old beer cans, bottles or car tyres? For most of us the answer is likely to be: a load of rubbish.

Not everyone, however, sees it this way. American architect Michael Reynolds considers tyres, bottles and cans 'natural resources'. Take tyres, he excitedly explains to me on the phone from his home in New Mexico – 'you can get them anywhere on the planet. In cities you have tyre stores that have to pay to get rid of old ones. In underdeveloped areas they're lying all over the place. Nothing good is really being done with them.'

Reynolds has found a way to turn garbage

into what he describes as 'gold' – housing gold.

Since the 1970s he has been designing and building 'Earthships' – sustainable, self-sufficient homes that can be built from recycled and natural materials.

You'd think that being built from unwanted garbage they'd be ugly, collapsible and makeshift. Yet these dome-shaped dwellings, which look more like spaceships than housing as we know it, have been described as 'magical', 'beautiful' – 'the eighth wonder of the world' even. Plus, they are sturdy enough to withstand earthquakes measuring force nine on the Richter scale.

Reynolds built the first one in the New Mexico desert more than 30 years ago, and

it's still standing strong today. In the small community of Taos where he still lives, he and his crew have constructed 60 Earthships over the years. They've had requests to build them around the world. Currently, Earthships are in use in almost every US state, as well as in many countries in Europe.

After more than three decades of refining the technique he says he is just 'starting to scratch the surface of what is available in this goldmine that we're starting to penetrate'.

What's valuable about these houses is their self-sufficiency. They can operate entirely off-grid, with no power, gas or water lines coming in and no sewage lines going out. Yet they still manage to keep their inhabitants warm.

'It's -18°C outside when I wake up,' says Reynolds. 'Inside, the temperature is 21°C.'

It's all down to the design. The basic building blocks of an Earthship are earth-filled car tyres, using the concept of thermal mass both to cool and heat the buildings. On sunny days the sun soaks into the building and the mass holds the heat.

Internal, non-load-bearing walls are made out of mud or cement, with cans or bottles set like bricks. Earthships also make use of solar and wind electricity, contained sewage treatment and water-harvesting.

'What these kinds of houses are doing is taking every aspect of your life and putting it into your own hands,' says Reynolds. 'A family of four could totally survive here without having to go to the store.' Earthships even have internal space designed for growing food with drip-irrigation systems.

So what's it actually like to live in one? 'It's an empowering experience,' he assures me. 'It puts you in direct contact with sources –

energy, water, heat. It makes you more able to take care of yourself. You're not so vulnerable.'

What's more, Earthships are relatively easy to build. Reynolds says the technology is 'graduate-school stuff. It's easy. It's there for the taking.'

In the realm of radically sustainable housing he is certainly a visionary. Earthships tick many eco friendly boxes. Constructive use of rubbish: tick. Self sufficiency: tick. Suited to a post-oil world: tick.

A 2007 documentary, *Garbage Warrior*, directed by Oliver Hodge, celebrated Reynolds' work and charted his struggle to get the houses built. It was, says Reynolds, 'a long and treacherous process.'

'The problem is all the bureaucratic, legal codes and regulations that are out there,' he explains. 'People are recognising that all over the developed world we have rules and laws in place to "protect" people, and this is holding people back from evolving. We need to evolve radically in how we build things.'

Radical, rebel, rule-breaker

In the documentary, Reynolds comes across as a man on a mission. He sees his sustainable homes both as a solution and a 'direction for humanity'. Getting them built has meant 'breaking laws left, right and centre'.

Although a conventionally trained architect, he has always been a rebel: 'Everything I've ever done has been radical'. As a result of violating regulations he lost both his state and national architect's license in the late 1990s. Everything he was doing fell outside what was considered 'legal construction'.

Later, the Earthship settlements were ruled illegally convened in breach of planning law. Job sites were shut down and building came to a grinding halt. Reynolds realised the only way to get things going again was to play by the rules, which meant making the settlement a legal subdivision, a process he describes as 'endless horseshit'. Inspections, lever-arch files of paperwork, archeologists, engineers, diagrams and drawings 'that nobody ever

PHOTOGRAPHS: KIRSTEN JACOBSEN





Above: Entirely self-sufficient, the most modern Earthship bathrooms even have hot showers

Right: A bedroom in the Phoenix Earthship

Below: A machine that heats and cools itself, the buildings can cope with most climates

Opposite page: An Earthship visitor centre. Reynolds wants educational facilities in every city



uses', all at a cost of thousands of dollars.

It took seven years to get the development completely open again, in 2004. Even so, he lost the right to experiment and create new buildings and innovations. There was no evolution, no scope to make mistakes.

What Reynolds wanted was a test site, with no holds barred. As he points out, 'They allow it for bombs, cars and aeroplanes – why not houses?' He realised that what was needed was a change in law to allow for easier testing of sustainable housing. 'Sometimes to fight the system you have to get in it and be part of the system,' he says.

It took him three-and-a-half years to write one law (the 'sustainable building test site' law), get it accepted in New Mexico and get the governors to sign. In 2007 his test site was finally approved by the state legislature.

Whereas in the US he had to beg on hands and knees to build, in other parts of the world Earthships have been welcomed with open arms. This was particularly marked in 2005 when Reynolds and his team were invited to one of the tsunami-hit Andaman islands.

There he introduced the concept of the low-tech shelter made from local materials and with the ability to withstand a force-nine earthquake, and showed them how to build an Earthship. 'They wholeheartedly jumped on the idea,' he says. 'There were no barriers. When there's an absolute breakdown of everything then new ideas are clutched like they could be lifesavers.'

Ironically, when the US Board of Architects heard about his work it invited him to reapply for his architect's licence.

Bullshit and biotecture

Reynolds prefers to think of what he does as 'biotecture', a word he came up with 10 years ago to define a profession based on architecture, biology and physics. He points out that, over the years, the architectural establishment have viewed him as an idiot, incompetent, insane, a dreamer and even a crook. 'I scared a lot of people. I was building out of garbage. People's perceptions of it are changing, though. They're now seeing that it's a good material.'

He admits that in the early days there were 'fuck-ups'. There was the case of a writer who stayed in one of the Earthships and his typewriter melted. Sometimes the houses were too hot or leaked. 'I'm just glad I didn't kill anybody,' Reynolds says. As he's keen to emphasise, however, 'it's experimental. Some things don't work. Some things could be better'.

So what needs to happen next? He doesn't have faith in the legal process. Even though he got his law through in New Mexico, for it to appear in every state and county would take many more years of 'legislative bullshit', and

as he says, 'we don't have that kind of time.'

At the time of writing he was planning a talk at the UN in June about invoking martial law to apply the Sustainable Sites Act on a wider scale. 'Yes, there would be a few mistakes here and there, but it's way less damaging than this slow evolution. We're not keeping up.'

The Earthship model could potentially be rolled out on a larger scale. Reynolds wants to go to every city, constructing a building there to make it an educational facility.

'It's not just a shelter,' he says. 'You're building a machine that heats and cools, contains and treats its own sewage. It requires an education. So first you provide the prototype that they can replicate.'

The newest Earthship has a flatscreen TV and high-speed internet connection. He says it's what people want and that it shows you don't have to live in a hut. The buildings have all amenities, such as hot showers and baths.

Do they work in other climates beyond New Mexico? 'Yes, but in severe areas like the Sahara desert and the North and South poles they work to the extent of reducing the amount of fossil fuel'. Different climates suit different shapes – a building in Europe could be made to look very conventional, for example. 'But really, to hell with what it looks



like: it's how it performs that matters.'

As Reynolds points out, 'We're running out of oil. We know that in the future we're rendering this planet damn near uninhabitable. So as we move towards that we're trying to devise a method of living that allows people to take care of themselves.'

www.earthship.net

Laura Sevier is the *Ecologist's* Daily Life Editor

'To hell with what it looks like: it's how it performs that matters. We know we're rendering this planet uninhabitable'

PHOTOGRAPHS: KIRSTEN JACOBSEN



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ON THE FRONTLINE

This month: Environmental justice. By Andrew Wasley

You could be forgiven for thinking lawyers have an easy ride – the huge pay packets, boozy lunches and prestige that comes with bringing to justice those guilty of serious wrongdoing (or successfully defending those falsely accused).

Television dramas such as *This Life*, which famously followed the professional and personal lives of a group of ambitious, drink-fuelled and sexually charged young lawyers, have done little to dispel such stereotypes.

Yet in many parts of the world, such a career choice comes at a heavy price. In South and Central America, south-east Asia, as well as in China and former USSR states, legal advocates face harassment, death threats, incarceration, violence and even murder.

Powerful criminal syndicates, corrupt government officials, Big Business, the army and paramilitary groups make formidable enemies for those championing human rights and – increasingly – environmental justice.

With its recent history of conflict between the authorities (backed-up by paramilitaries) and left-wing rebels, as well as widespread corruption, rampant environmental exploitation, drug-trafficking and a culture of impunity, Colombia has become the world's most dangerous place to be a lawyer.

The statistics are shocking: more than 400 Colombian lawyers have been murdered since 1991, with numerous instances of harassment, threats and violent attack. No-one has been prosecuted for the killings. The problem has become so acute that the Law Society of England and Wales recently took part in a fact-finding mission to investigate the situation.

The group's report highlights how members of lawyers collective *Corporación Colectiva de Abogados José Alvear Restrepo (CCAJAR)* are forced to travel in armoured cars, wear bullet-proof vests and live in houses fitted with bullet-proof glass. A CCAJAR founding member was murdered; others have been forced into exile.

Years of conflict and land-grabbing have displaced 3.5 million Colombians. Strategic land is frequently seized by paramilitaries or the army, or exploited for use as cattle ranches, plantations for cash crops such as palm and sugar cane, or for mining.

In Santander province, oil extraction coincided with an increase in paramilitary and army activity. Since the arrival of paramilitaries, as many as 40,000 local people have been reported killed, 500 'disappeared' and more than 100,000 forced to flee.

Lawyers fighting to prevent the persecution and eviction of indigenous groups and peasant farmers in the region – or trying to negotiate their return – have themselves been targeted.

Members of the *Corporación Colectiva de Abogados Luis Carlos Pérez (CCLAP)*, named after the murdered human rights campaigner, say the situation has become so bad they have been forced to request protection from overseas NGOs. CCLAP lawyers have received death threats and prominent members have been forced to leave the area.

For more information

To find out how you can help human rights defenders globally, visit Amnesty International and Lawyers Without Borders www.amnesty.org/en/how-you-can-help www.lwob.org

Members of lawyers collective *Yira Castro*, which specialises in human and land rights issues, have repeatedly been threatened by paramilitary outfits, followed by government agents, had offices broken into and computers seized, and been subjected to covert surveillance, including email interception.

Yira Castro has been instrumental in fighting plans by the Colombian government to hand over 20,000 hectares of land in north-east Antioquia to develop a vast goldmine. Campaigners claimed it would cut through land used for food production, small-scale timber harvesting and community events.

In 2007, *Yira Castro* lawyer Irene López returned home to find a note pinned to her house saying, 'You are going to die on 24 December'. A year later, she received an email that threatened her if *Yira Castro* continued to work with Rigoberto Jiménez, a leading advocate for displaced farmers. The notorious



paramilitary group behind the email, *Águilas Negras*, claimed it had received orders to kill Jiménez 'as soon as possible'.

It is not only in Colombia that champions of human rights and environmental protection are being

targeted. In Peru, congresswoman and lawyer María Sumire has been persecuted for campaigning on indigenous rights, and was hospitalised after being attacked.

In Bolivia, cattle ranchers and loggers threatened to burn lawyer Cliver Rocha alive because of his work on behalf of the country's Centre for Legal Research Studies and Social Research. Rocha has also been attacked, and an armed mob ransacked his offices in Riberalta.

In Papua New Guinea, following investigations that exposed how government complicity and corruption was enabling illegal logging, lawyer Anne Kajir was brutally attacked, and has had her house broken into.

Amnesty is currently calling for the release of Chen Guangcheng, a blind human rights lawyer who has spent more than 1,000 days in prison. Having investigated China's family-planning policies, he claims government officials have been involved in sterilisations, forced abortions and arbitrary detentions.

Hou Wenzhuo is among other Chinese lawyers to be persecuted. Her work on land disputes and farmers' rights saw her put under house arrest, harassed by police, and have her office closed down by the authorities. Under threat, she was forced to flee to the US.

China is desperate to curtail the growth of the so-called 'rights protection movement' seeking to ensure legal rights are enforced. The country suffers from chronic corruption and poor administration, meaning that property and land rights, as well as environmental protection laws, are frequently flouted and abused. The leaders of this new movement are prime targets for the Chinese regime.

This Life this is not.

Andrew Wasley is a journalist with investigative agency *Ecostorm* and a producer for the *Ecologist* Film Unit

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BARCHESTER GREEN INVESTMENT

Oh, apparently there are green shoots...
and I know there's been a G20 meeting (whatever that means)...
But I'm still a bit worried about the financial market because the
media keeps telling me that we're in ongoing trouble...
and yes, I want to look after my long-term finances
but I don't want to damage the environment.
So what should I do???

Wouldn't it be great if there was somebody in UK who knew all about green money & ethical and socially responsible investment and could help me make money without damaging the environment and who you could talk to without worrying about who they were and whether they knew what they were doing?



**WELL, GUESS WHAT?
WE'RE STILL HERE...**

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- for further information, please call
Jackie Adams at our Administration Centre

01722-331241

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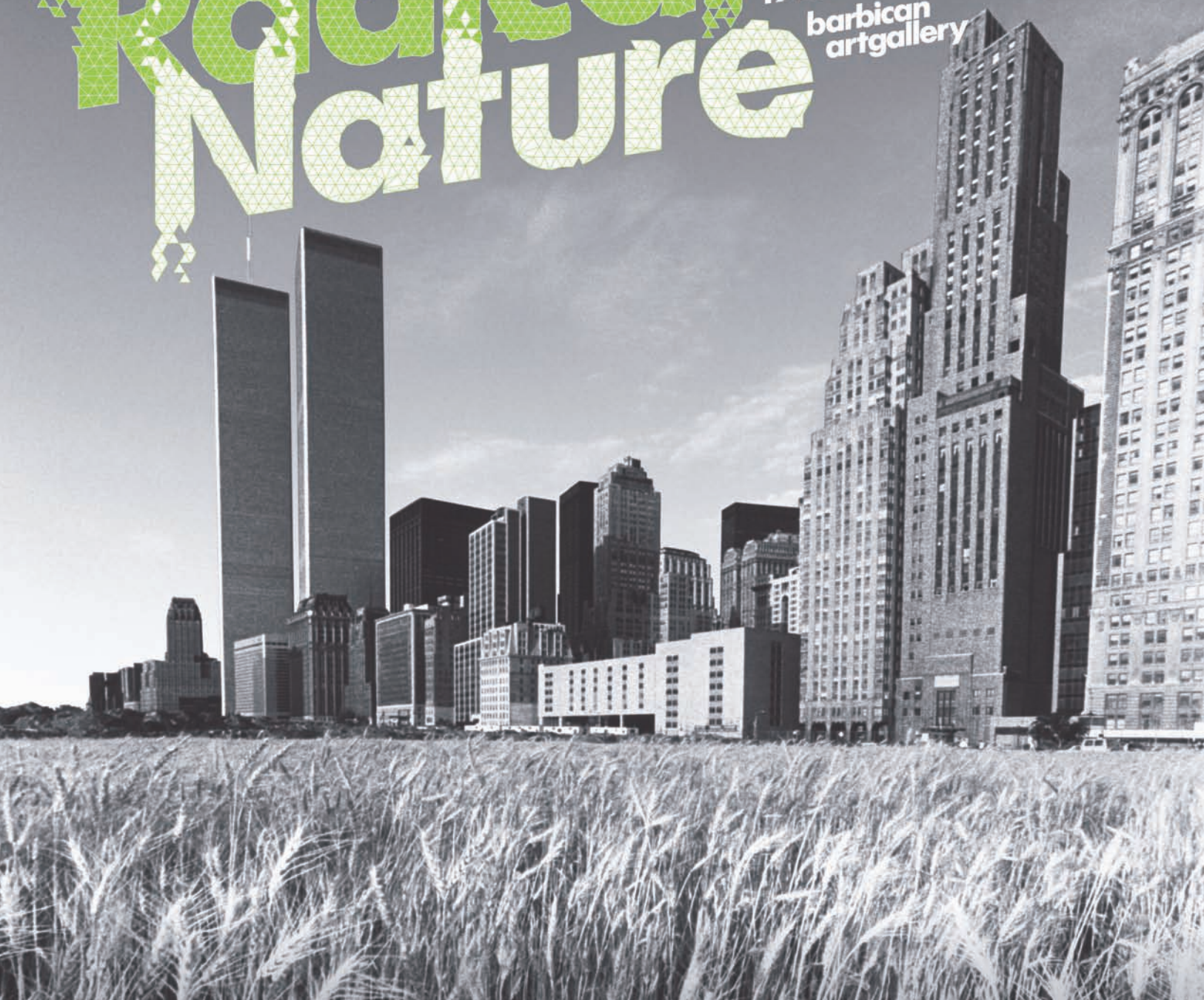
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for a Changing
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19 Jun – 18 Oct 09

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www.barbican.org.uk/artgallery

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The RSA Arts and Ecology Centre collaborated in creating the events and commissions for the exhibition



The Barbican Centre is provided by the City of London Corporation as part of its contribution to the cultural life of London and the nation.

Agnes Denes, Wheatfield – A Confrontation, 1982. 2 acres of wheat planted and harvested in Battery Park landfill, downtown Manhattan. Commissioned by Public Art Fund, New York. City Photo. © Agnes Denes. Courtesy the artist



DAILY LIFE

Pick herbs, seek shade, buy raffle tickets, join a boat party, check out eco art, visit a green festival or three, lose yourself in a national park, eat cherries
By Laura Sevier

JULY

Spotlight on...

colourful tomatoes

Yellow Russian, Potato Leaf White, Scarlet Knight, Peacevine Cherry, Mortgage Lifter... Race horses or cocktails these are not – they all are rare tomato varieties. Over the past century, we have lost more than two-thirds of the world's tomato varieties – enough to get tomatoes listed by international seed organisations as among the most genetically threatened of all the Earth's crops.

Tomato varieties range wildly in colour, from purple and yellow to green and black. The extinction of wild tomato varieties has not only deprived us of their taste and visual sensations, but also threatens the survival of commercially grown tomatoes. Experts have noted that wild species are the principal source of resistance to at least 19 tomato disorders – from nematodes to leaf mould. As governments and corporations have disposed of traditional tomato seed varieties, so they have increasingly been putting the entire plant species at risk.

To 'adopt' and conserve a tomato variety or other endangered seed or strain of vegetable, visit the website of Garden Organic, the organic charity behind the Heritage Seed Library
➤ www.gardenorganic.org.uk



The Heritage Seed Library (HSL) is the UK's only living library of its kind, safeguarding 800 endangered varieties of common vegetables such as tomatoes, carrots, beans, peas and onions. Many rare tomato varieties are awaiting adoption through the HSL's 2009 Endangered Seed Appeal. Donating to this scheme helps ensure the library's large gene pool and preserves not just individual veg varieties, but whole ecosystems.

3 THINGS TO DO...

Pick It's the season of salad. Add flavour to your lettuce leaves with fresh herbs such as mint, parsley, basil, coriander and chives. Pick them from the garden or keep pots of growing herbs on the kitchen window sill

Seek shade Although temperatures are soaring, slathering on conventional sunscreen can have health implications of its own. To find out more go to www.theecologist.org, type 'sunscreen' into the search engine and read Pat Thomas's *Behind the Label* article

Eat Have an ethical BBQ party. Andy Hamilton shows you how it's done on **page 68**

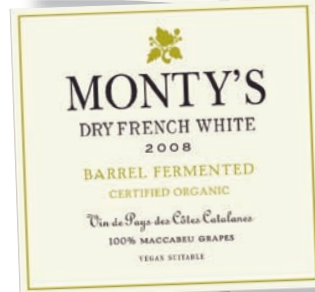


PICK OF THE MONTH

MONTY'S 2008 WINES

Monty Waldin, whose exploits making biodynamic wine in France were filmed by Channel 4 last year for *Chateau Monty*, has released his first dry white and pink wines, as well as his second vintage of red. 'As I recycled a ruined old cement tank for my 2007 and 2008 red wines, I decided I'd use the same idea for the 2008 dry white and dry rosé wines, recycling some old oak barrels I bought secondhand from a Burgundy winegrower,' he says. 'Most winegrowers chuck out oak barrels after three years, but if you are scrupulous about cleaning and looking after them you can double their lifespan, saving both money and timber. I'll be moving to ultra-lightweight wine bottles for my next wines, again to try to get the most out of precious natural resources.'

➤ **Monty's 2008 wines are on sale at Adnams, see <http://cellarandkitchen.adnams.co.uk>**



this month

By Laura Sevier

11 July

Trees Love You

Trees Love You is a summer boat party on the Thames organised by Trees for Cities. It's in aid of tree-planting in London and beyond. The boat will cruise from 2pm until 8pm, taking in points east and west. Partygoers be joined on decks by a line-up of DJs including Rocky (X-Press 2) and Ben Osborne (Noise of Art). The dress-code on board is 'Summer of Love'. Tickets cost £18, are available in advance only and are very limited.

➤ Buy your tickets now using secure online payment, see www.treesforcities.org/parties

Until 13 July

SAS Thrifty Green Raffle 2009

Help Surfers Against Sewage (SAS) clean up the coastlines without cleaning out your wallet. Buy a ticket for the SAS raffle for just 50p and you could win a fantastic eco-friendly prize. First prize is £500 towards a UK and Ireland surfing holiday, as well as £500 of technical apparel from ethical surf brand Finisterre. Other prizes include an eco-surfboard from the Eden Project, airmile-free holidays on the Isles of Scilly and Jersey, a low-impact yurt holiday, a wind-powered cruise around the Cornish coast in a yacht and a locally sourced meal at Fifteen, Cornwall. The raffle is SAS's biggest annual fundraiser, so every ticket counts.

➤ **Check out www.sas.org.uk for more information and to buy tickets. Closing date 13 July 2009.**

email: laura@theecologist.org with upcoming events

* ECO ART

Until June 2010

Recycled Sculpture Show

Weird and wonderful sculptures including frogs made from recycled CDs will be placed around the **WWT LONDON WETLAND CENTRE** as part of the Love London event line-up.

➤ www.wwt.org.uk



PHOTOGRAPH OF FROG: NICOLE SNOWDEN

19 June- 18 Oct

Radical Nature

Radical Nature: Art and Architecture for a Changing Planet 1969-2009 draws on ideas that have emerged out of Land Art, environmental activism, experimental architecture and utopianism. It is the first exhibition to bring together key artists and architects across different generations, from the 1960s until now, who have tried to address creatively our changing environment and climate change. See also page 38.

➤ **BARBICAN ART GALLERY, LONDON**



11 July-15 Sept 2010

Tell it to the Trees

Ancient woodlands, a mysterious picturesque valley, an intimate walled garden and a gothic castle are the setting for *Tell it to the Trees*, a year-long exhibition of contemporary sculptural installations and paintings at the **NATIONAL TRUST'S CROFT CASTLE IN HEREFORDSHIRE**. Nine artists were invited by visual arts commissioning organisation Meadow Arts to make or show work that is inspired by our relationship to trees.



Top: A frog made from recycled CDs at WWT London Wetland Centre

Middle: Art, architecture and environmentalism at the Barbican

Above and left: Our relationship with trees explored at the National Trust's Croft Castle, Herefordshire



FOOD IN SEASON

Fruit

- Apple
- Blackberry
- Blackcurrant
- Redcurrant
- Cherry
- Cobnut
- Elderflower
- Pear
- Plum
- Rhubarb
- Tomato

Courgettes are small summer squashes and Britain's 10th most popular veg

Vegetables

- Artichoke (globe)
- Aubergine
- Bean
- Beetroot
- Broccoli (calabrese)
- Cabbage
- Carrot
- Cauliflower
- Chard
- Courgette
- Cucumber
- Dandelion
- Endive
- Fennel
- Garlic
- Kohlrabi
- Leek
- Lettuce
- Onion
- Pea
- Potato
- Pumpkin
- Radish
- Rocket, wild
- Samphire
- Shallot
- Sorrel
- Spring onion
- Squash and pumpkin
- Sweetcorn
- Turnip
- Watercress
- Wild mushroom



* 3 OF THE BEST... GREEN FESTIVALS

25-26 July

The Big Tent Festival

Scotland's biggest eco festival was launched as part of the grassroots protests aimed at the G8 summit held at Gleneagles in the summer of 2005. 'Stewardship' is the central theme, which its organisers say is 'the act and art of holding, nurturing and vitalising assets for others – including the next generation.' There's lots going on: workshops, craft, storytelling, debates, poetry, exhibitions and book-readings, plus food at the One Planet Food Village. Bands include the Creole Choir of Cuba, Shooglenifty, Attic Lights and the Chipolatas

➤ FALKLAND ESTATE, FIFE
www.bigtentfestival.co.uk

29 July-2 Aug

The Big Green Gathering

A 'horsedrawn 21st-century' camp, a Green Futures Forum and musical acts performing on stages powered by renewable energy are just some of attractions at this five-day festival in Somerset. The festival has evolved out of the original Green Gatherings of the 1980s and the Green Fields of Glastonbury Music Festival, and now draws 15,000-20,000 people a year.

➤ THE MENDIP HILLS, NEAR CHEDDAR, SOMERSET
www.big-green-gathering.com

17-18 July

2000 Trees Festival

This small, intimate festival in the Cotswolds joined the likes of Glastonbury and Latitude festivals in 2008 by winning the 'A Greener Festival' award in recognition of its efforts in promoting environmentally friendly music festivals. At the 'TreeHouse' main stage, the Leaf Lounge and the GreenHouse, the music will range from rock to indie to folk to metal to pop – to the downright strange.

➤ UPCOTE FARM, WITHINGTON, CHELTENHAM, GLOUCESTERSHIRE
www.twothousandtreesfestival.co.uk



Clockwise from left
Blue skies over
The Big Green
Gathering, Somerset

Frank Turner at the
TreeHouse in 2008,
2000 Trees Festival,
Gloucestershire

The Big tent festival
in Fife

A wicker man
with non-wicker
child at The Big
Green Gathering



10 GREEN BOTTLES

By
Anna Shepard

Nasturtium vinegar By now any nasturtiums in your garden will be spreading like wildfire, winding their lithe stems across anything in their path. To rein them in, why not pick a handful of flowers and half a dozen leaves, wash them and leave to steep in a pint of white vinegar (cider vinegar, if possible). Use a large jam jar or a bottle with a screw-top lid and store it in a cool dark place for two weeks before opening. The peppery vinegar makes a delicious dressing for salads and can also be used to marinate meats. It will keep for several months in the fridge.

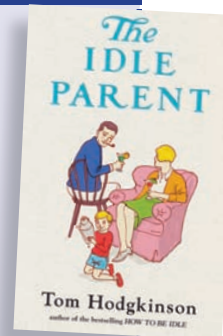


this

*** OUT NOW**

**The Idle Parent
Tom Hodgkinson
(Hamish Hamilton, £14.99)**

Tom Hodgkinson's latest book argues that kids and adults alike need to play more and work less. We put far too much effort into parenting – if we leave our kids alone, they will become more self-reliant and we'll be able to lie in bed for longer. His website is also full of great tips, discussion, resources and links on how to enjoy family life without having to spend lots of money.
www.idler.co.uk



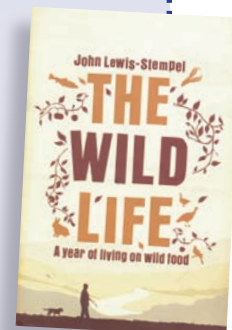
**English Journeys
(Penguin, £4.99)**

The countryside has provoked a vast variety of responses from artists, writers, musicians, those who have lived and worked on the land, and people who have travelled through it on horse or by foot. Penguin has brought together 20 books in celebration of this tradition, including Vita Sackville-West on gardening, Dorothy and William Wordsworth on the Lake District and John Stewart Collis on woods.



The Wild Life John Lewis-Stempel (Doubleday, £16.99)

How challenging would it be to live entirely on wild food for a whole year? John Lewis-Stempel's book proves that living only on food provided by nature is not only possible, but also can be pleasant, albeit hard and tiring. He lived for a whole year purely on food hunted, shot, caught and foraged from the fields and copses of his 40-acre, 17th-century Herefordshire farm. The experience brought him closer to Nature (with a capital 'N') closer to his history and family, and more importantly to his own self. Tough, honest, funny, poetic and informative, this is an initiatory and spiritual journey. A life lesson for us all.
Sophie Chamay



**11-12 July
Cherry Festival**

Taste cherries such as the Napoleon Bigarreau or try cherries that were enjoyed by the Romans at Brogdale Farm in Kent, home of the National Fruit Collection. There will be cookery and gardening demonstrations, as well as fruity dishes, jams and preserves, and a display of several varieties from the collection. Operated by a social enterprise company, Brogdale Farm is home to nearly 4,000 fruit varieties from around the world.

➤ www.brogdalecollections.co.uk

**27 July-2 Aug
National Parks
Week**

Need some fresh air? National Parks Week is a reminder that these big, beautiful, wide-open places exist. Pack a picnic, head out to one of the UK's 14 national parks, where you can walk, ride, boat, climb or cycle. This year is a celebration of 60 years since the National Parks and Access to the Countryside Act, which set up the creation of national parks back in 1949. There are loads of special events, including solar boat rides and hands-on dry stone walling.

➤ **Find one near you at**
www.nationalparks.gov.uk



Walking the Solent Way at Keyhaven in the New Forest National Park

PHOTOGRAPH: MARTIN O'NEIL / NEW FOREST NPA

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Alice Waters

Food activist and founder of Chez Panisse restaurant

Can you describe a typical day?

First thing in the morning, I take a walk with a friend to clear my head and plan out my day. When I return home, I drink a café au lait, read the newspaper and take phone calls. Then I drive over to Chez Panisse [Berkeley, California] at around 11:30am for tasters with the chefs and cooks, perhaps followed by a lunch meeting in the café. Dinner is usually at my house, with friends and family; we cook together and share a glass of wine or two. I love old films from the 1930s and watch one or two classics every evening.

What book or film would you recommend to all politicians?

To learn more about industrial agriculture and our current food system, Eric Schlosser's *Fast Food Nation* and Michael Pollan's *The Omnivore's Dilemma*. Jonathan Kozol's books on the US public school system, particularly *The Shame of the Nation: The restoration of apartheid schooling in America*, have had a profound influence on my work.

When are you most happy?

I'm most happy when I'm sitting around the table with loved ones, stoking my fireplace and cooking over the open hearth.

What makes you angry?

It's upsetting to me when people don't understand the centrality of food to the rest of our lives, and when they don't see that the choices we make about what we eat not only impact our own wellbeing, but also the wellbeing of our fellow humans and planet.

Where do you live and why?

I have lived in Berkeley, California, since my twenties because it's a place where many people share my values. It's a university town with a great cinema, wonderful used bookstores and incredible farmers' markets.

What is your favourite meal and made by whom?

A Parsi feast prepared by my dear friend and cookbook author Niloufer Ichaporia King.

What causes do you most actively support and why?

I firmly believe that every American child who attends public [state] school should have the right to a nutritious, organic, seasonal lunch. Beyond that, I believe in a concept I call Edible Education, which has been put into practice at The Edible Schoolyard (ESY), a programme of the Chez Panisse Foundation. It's a one-acre organic garden and kitchen classroom for urban public school students at the Martin Luther King Jr Middle School in Berkeley. At ESY, students participate in all aspects of growing, harvesting and preparing nutritious, seasonal produce.

What's the most touching praise you've ever received about your restaurant?

Perhaps the biggest honour of my career was when the Dalai Lama shared a meal with me at Chez Panisse.

www.chezpanisse.com
www.chezpanissefoundation.org

How to...

Have the most ethical barbecues

Invest in UK charcoal, trade in the paraffin firelighters for a cramp ball fungus and you're all set for a summer of sustainable sizzling. **Andy Hamilton** grabs his tongs



I regularly have to bite my tongue over the summer months whenever I am invited to a barbecue. I never want to seem ungrateful, but at the risk of becoming a social leper this barbecue season I have to admit that I don't understand why my otherwise green friends suddenly decide to get imported charcoal, economy burgers and cheap mass-produced lager and economy lemonade served in throwaway plastic cups as soon as the sun comes out. With a little thought it is very easy to throw an ethical barbecue.

Firelighters

Fire-lighting can be a problem, as we tend to opt for the less-than-eco option of firelighters or dousing the coals with a flammable liquid, often petrochemical-based, such as methylated spirits. We could instead take an etching out of Stone-Age man's cave drawing and use a fungus. The cramp ball fungus, also known as King Alfred's cakes (*Daldinia concentrica*), grows on dead and decaying ash trees, and can be found in most woodlands – even in my local park. Lit with just a spark it will continue to burn for some time. One is generally all you need to start a barbecue.

Charcoal

Approximately 90 per cent of the charcoal we buy in the UK is imported; even worse, the wood used is often harvested from tropical rainforests. This is a ludicrous state of affairs considering we have been making charcoal on our shores since the Bronze Age.

Charcoal can be made from coppiced wood from here in the UK. Essentially this means that trees are cut back and their wood is harvested every few years. The wood is then stacked and heated in an airtight kiln, where it becomes charred rather than burnt.

One company with excellent eco credentials that manufactures charcoal made from UK woodland is the BioRegional Charcoal Company. The company states that its charcoal is 100 per cent natural, easy to light, lasts longer, supports local employment and traditional industry, and reduces the CO₂ of importing by as much as 85 per cent. It is available from some of the bigger stores, or you could ask your local store to stock some.

Meat

Due to the methane produced by the animals, the fuel used to import the meat and the damage to the environment caused by intensive livestock farming, meat is certainly a sticky issue environmentally speaking. I think some agreement can be reached in suggesting that economy burgers should be avoided at all costs, however, and that we should aim for British meat. Perhaps controversially, because of the methane

produced by the ruminants, I tend to opt for Welsh lamb during the summer months, as it is in season, is fairly local to my Bristol home and Welsh sheep are often grazed on land that, in agricultural terms, cannot be used for much else. I have also tried British venison for a barbecue, which, although costly, can be made into very delicious burgers.

Cups and plates

An old friend of mine has a barbecue every year and invites the whole of her village. She never bothers with paper or plastic plates and cup, and instead uses normal crockery and glasses. She has a huge stock of them, collected cheaply from charity shops over the years, and after the barbecue the guests all help with the washing-up. I now do the same. Saying that, I can understand that some

people could be worried about breakage and would want to use plastic plates. For you there is a recycled alternative available from the Ethical Superstore for £5.99 (www.tiny.cc/plasticplates). Or if you want to have something really different, how about crockery made from palm leaves? These can be used many times and at the end of their life can be composted or even fed to a cow. Twenty-five palm-leaf bowls will cost you £10.99, and they are available online from Nigel's Eco-store (<http://tinyurl.com/leafplates>).

For cups, personally I serve drinks in plastic cups from Thermos flasks, or make a homebrew ale, which comes in bottles.

Andy Hamilton is co-author of *The Selfsufficient-ish Bible*

Do-it-yourself drinks – have you got the bottle?

HOMEMADE LEMONADE

My girlfriend Emma makes this lemonade for each one of our barbecues for our ever-increasing tribe of non-drinking friends. It is both refreshing and simple to make.

INGREDIENTS

The juice of seven lemons
110g of fine sugar
1.75 litres of warm water

METHOD

■ Pour the sugar into the warm water and stir until dissolved. Allow to cool then add the lemon juice. Serve with a sprig of mint.

ELDERFLOWER CORDIAL

An easy-to-make drink that will keep for almost a month if simply bottled, although is best to drink within two weeks.

INGREDIENTS

20 elderflower heads
1 sliced lemon
2 tsp of citric acid (ask at your chemist)
1.5kg (3.5lb) of sugar
1.2 litres (2.5 pints) boiling water

METHOD

■ Boil a kettle for the water.
■ Fill a bowl or small bucket with all the other ingredients.
■ Pour the water over the other ingredients and stir until the sugar has dissolved. Skin the surface of the water to get rid of the scum that can arise. Cover with a cloth (mine has a pillowcase over it).
■ Stir twice a day for five days. Strain through a fine sieve or through muslin cloth and decant into sterile screw-topped bottles. Refrigerate.
■ As with other cordials, dilute with five parts water to serve. Experiment with it and add it to some of your favourite spirits. It is really nice as a gin mixer.

ROSEMARY ALE

Rosemary is one of those herbs that you should never have to buy. Have a walk around your local neighbourhood and you will be sure to find some growing in someone's front garden. I am not suggesting you should just help yourself, but I am sure that if you knock and ask nobody will begrudge you a few sprigs.

INGREDIENTS

56g of rosemary leaves, stripped from the sprig
750g Fairtrade brown cane sugar
600g Essential Food organic barley malt extract
9 litres of water
1 packet of Young's Gold brewing yeast

METHOD

■ In a very large pan (or two smaller ones), boil 5 litres of water and the rosemary for 30 minutes. Meanwhile pour the malt extract and the sugar into a sterilised fermentation bin.
■ The boiling water should be strained through a muslin cloth or very fine sieve (or even an old t-shirt – as long as it is clean) into the fermentation bin. It should then be topped up with cold water to reach nine litres. Leave in a warm place (between 16°C and 21°C) for a week.
■ I found that this brew created a large amount of sediment, so after the week it is advisable, though not imperative, to decant into a couple of demijohns for a further week before bottling. If decanting into demijohns then you could pour in half a jar of honey to prime or two tablespoons of sugar. If going straight to bottling then prime with half a teaspoon of sugar in each bottle. Either way the beer will be ready in a further week.

A word of warning does come with this beer, as my hydrometer reading and the resulting mayhem after people have had a few pints suggests that it is brewed to a strength of six per cent.

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Independent Thinking from Polity

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THE POLITICS OF CLIMATE CHANGE

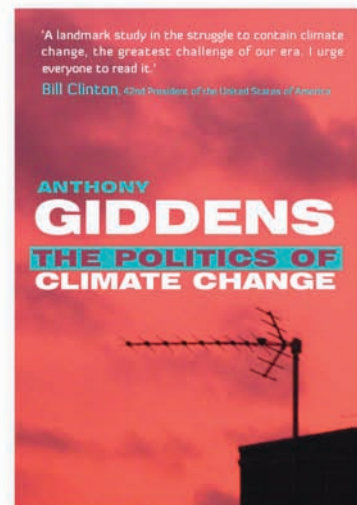
ANTHONY GIDDENS

'A landmark study in the struggle to contain climate change, the greatest challenge of our era. I urge everyone to read it.'

Bill Clinton, 42nd President of the United States of America

Political action and intervention, on local, national and international levels, is going to have a decisive effect on whether or not we can limit global warming, as well as how we adapt to that already occurring. At the moment, however, Anthony Giddens argues controversially, we do not have a systematic politics of climate change. Giddens introduces a range of new concepts and proposals to fill in the gap, and examines in depth the connections between climate change and energy security.

This book is likely to become a classic in the field. It will be of appeal to everyone concerned about how we can cope with what amounts to a crisis for our civilisation.



256 pages • 20th March 2009
978-0-7456-4693-0 • pb • £12.99

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HOW DO YOU DEFINE UNNECESSARY TRAVEL?

With plane, train and automobile emissions still increasing, are we being honest with ourselves about how and how often we travel? **Matilda Lee** looks at the bare necessities of transport

As I write, I'm 36,000ft above the Atlantic ocean on a Boeing 747. It's hardly moral ground from which to argue against personal air travel, but I am the first to admit how difficult it is to keep action in line with principles. My personally allocated 'love miles' – the distance travelled to be with my loved ones – are being redeemed on an annual flight to a family reunion just outside Washington DC. This flight is necessary. Not taking it would mean never seeing my family; my kids wouldn't recognise their grandparents. At the same time, aviation is the UK's fastest-growing source of greenhouse gas emissions, and at this rate will exceed this country's entire carbon allocation by 2050. If we are to have any chance of reducing CO₂ emissions by 80 per cent by 2050, air travel needs to ground to a screeching halt. I can almost hear George Monbiot over the loudspeaker: 'If you fly, you destroy other people's lives'.

How many of the 200 million passengers using British airports every year are boarding flights for weekend shopping trips to New York and Bank Holidays in sunny countries, I don't know. Over 10 years, the average growth in CO₂ emissions from aviation has been 4.5 per cent per year. Everyone agrees behaviour change is vital to emissions reductions, but appealing to people's consciences to stop flying has only worked to a certain degree.

Putting love miles aside for the minute, business is still business. Neither of the people I'm seated next to – both of whom have been bumped from business class as it was too full – are in a moral quandary about flying. On my left is a man going to DC on a





24-hour business trip – for one meeting. What justifies the flight? ‘The meeting was “business critical”’, he says. What does that mean? ‘It’s a new policy. You need to write a longer email to the boss to make your case.’

It’s more heartening to hear the man on my right hasn’t flown in six months. ‘My company has drastically cut down on air travel. I need to ask the executive vice-president in order to fly,’ he says. Even with a \$1 million investment in video conferencing equipment his company has recently made, the ‘telepresence’ effect wasn’t enough to keep him off this plane.

Companies are capping corporate air travel, which helps, but in these cases at least, the decisions were cost-saving measures and not based on any corporate social responsibility policies.

Questioning unnecessary travel really means considering the modes of travel available to reach your destination and choosing the one with the least carbon intensity. Virtually all destinations around Europe are reachable by train and bus, but despite this, 45 per cent of air journeys in Europe cover less than 500km – the distance between London and the Scottish border. As Plane Stupid activist Graham Thompson says, ‘One important type of unnecessary flight is the flight you didn’t know you wanted to take until a billboard told you that you did’.

And we need to take a critical look not only at how much we fly: road transport already accounts for 26 per cent of the UK’s carbon dioxide emission, half of this is from cars

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alone, and over the past 25 years, road travel has increased by 80 per cent. A Sustrans survey shows almost half the car trips within three UK towns surveyed could be replaced by walking, cycling and/or public transport. Shockingly, more than 40 per cent of children aged five to 10 are taken to school by car.

Even if you have fallen into the habit of reducing unnecessary travel, there are further pitfalls when it comes to evaluating ‘green travel’. In his *Greenwash* column on the *Guardian* website, Fred Pearce has argued that trains are given an easy ride over their emissions. Depending on occupancy rates and type of train, emissions per mile on a train can be about the same as taking a ‘fullish’ plane.

‘Quick-fix’ solutions such as carbon offsetting have mainly been discredited; many schemes are based on planting trees, which is at best a short-term solution, and can end up being a net source of carbon if mismanaged.

Where does this leave us? As of November 2009, changes to the Air Passenger Duty mean that airlines will be taxed per plane, rather than per passenger. This means that airlines will be much more concerned with flying planes that are full, thereby reducing the overall tax burden per passenger. So by this autumn, taking a conscious decision not to fly will have even more of an impact – as it will have a direct impact on the cost of aviation – and therefore its prominence.

The idea of a one-flight-per-person annual allowance, with further flights heavily taxed, has already been floated by one political party, and quickly shelved. By and large, what we are lacking is a national transport policy that manages demand instead of one that ‘predicts and provides’. The solutions may not seem palatable to us now, but in the future they will be something over which we have no choice. Everything we do, use and buy contributes to our carbon footprint; should carbon rationing become a reality in future, the thoughtless ease with which we currently take flights will have to be replaced with a conscious calculation of its true cost.

Matilda Lee is the *Ecologist’s* Consumer Affairs Editor

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Cupboard love

Regarding John Naish's article 'Drugs on Tap' (May), unfortunately it should be 'chemicals on tap' – drugs are only part of the problem. What is needed is an article indicating the concentrations of man-made chemicals in tap water – and, if possible, in the environment.

For example – in addition to drugs – what will be the effects on our tap water of the current craze for home gardening? Look in your gardening cupboard. How many man-made chemicals are there? Since it was introduced, how many litres of so-called biodegradable glyphosate have been used by home gardeners in the UK to 'eliminate' weeds? How many litres have those in cities (and villages) inadvertently drunk in their tap water? What about residue from pesticides used not only by home gardeners, but also by market gardeners and farmers? What happens to the waste products of animal farming?

Look in your cupboards at home. How many packets, bottles, sprays and so do you have? What are the effects of the chemicals therein, the particles you and your family breathe in after the use of sprays to 'freshen' the air, clean the oven, deodorise?

And even when you have more or less carefully sorted out your waste, what happens? It goes into landfill, where the chemical are washed down into groundwater, streams, rivers and eventually the sea – some of it into the fish that are caught and then eaten by you. And the rubbish, including chemicals, that is burned in incinerators? It goes into the air, some of it to be washed down in the rain, into us,

LETTER OF THE MONTH

Biofuelling discontent

I especially enjoyed the subtitle of your recent biofuels piece: 'can we get it right this time?' ('Biofuels 2.0', February).

The trouble with biofuels 1.0 was not that they were made from corn or soy or palm oil, although those were indeed shortsighted growing pains; the real mistake made by environmental and social justice advocates alike was thinking that these fuels were inherently problematical, like petroleum or coal. In reality, and as you know, these 'fuels' are really just a means to transfer and store energy, and much like electricity or hydrogen can be created in many different ways and from many different feedstocks.

Far and away the most promising option for biofuel production and carbon sequestration is the production of algae in closed systems. I find it slightly amazing that the *Ecologist* produced a cover story on next-generation biofuels without giving this rapidly growing field its due.

In the end, which does more for the Earth – making a stink about what some people are doing wrong with corn or palm oil, or educating folks about the outstanding alternatives coming online? Every once in a while there are genuine and exciting new developments in the world – why not

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recognise and champion them rather than quibbling over distracting details?

Jamie Gilardi PhD (Ecology)
Davis, California

The Ecologist replies: See 'Slippery territory' (News Focus, April 2008) for a discussion of algae-based fuels.

MEETING DEMAND A smart grid needs smart household appliances

ECOLOGIST

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on to the land, into streams and rivers, and into the sea.

What would be useful is a list of the man-made chemicals found in the tap water of a few cities, towns and villages. To provide a list of the man-made chemicals in the water of the Mediterranean (in which millions of tourists swim) would keep analysts busy for several years. Some of them are taken out by desalination plants and then put right back through effluent.

To end on an anecdote: before the clean-up of the river Thames, the 'solid' material from some of London's sewers used to be put into barges at the Barking Outfall, carried down to the mouth of the Thames and dumped into the sea. The Thames Survey found that at certain states of the tide some of the material was back at Barking before the barges. On the 'positive' side, some of the Thames fishermen reckoned the solid

material was good food for the fish and the shrimps later sold for human consumption.

Mike Baker
former Thames Survey team member
by email

How to be provocative

Is Tom Hodgkinson for real? I hope he was being deliberately provocative in his article 'We Have to Let You Go' (*How to be Free*, May). I barely know where to start, and I'm sure I'm not the only one. 'Having a job is the same as being a slave' – what a start! I think you'll find there are plenty of differences. I know which I and everyone else would prefer, clearly indicating there is a difference.

Tom also seems to think that all jobs are office jobs with office politics and stupid bosses. He therefore paints a very specific picture in the reader's head of a particular type of job that he is trying to knock. What

about teachers, care-home workers, doctors, firemen and so on? They are employed in jobs too. Just because you work for someone else doesn't mean you can't get job fulfilment.

He goes on to say, 'I can think of 10 friends who have been made redundant and are all grabbing hold of the opportunity with open arms'. I think that says more about the kind of middle-class company Tom keeps, the sort who have savings and for whom losing their job is not a financial disaster.

The real shame is that I think he has some valid points to make about taking redundancy as an opportunity rather than a disaster.

The problem is that the article is so provocative that any valid points are lost. It reminds me of people standing on street corners, shouting about their religion. For every one person that might be influenced in the way they want, a thousand will be turned even further against.

For generating a reaction, Tom, well done. But be careful about the impact it will have on your cause.

Steve Mayes, by email

Error of some magnitude

Tom Hodgkinson in 'Commons cause' (*How to be Free*, June) refers to 70 per cent of UK land being 'owned by one per cent of the population – 6,000 individuals and companies'. I always enjoy Tom's articles, however I would query his maths in this case: the UK population is 60 million (handy that, with 60 million acres – an acre each, not three acres and a cow though), therefore one per cent of the population is 600,000, which is two orders of magnitude different.

Andrew Hutt, by email

The Ecologist replies: The article should have read 'less than one per cent of the population'. You might wish to read Kevin Cahill's book Who Owns Britain (Canongate Books) for an interesting discussion on landownership in the UK. Kevin also puts the number at around 6,000 – mostly aristocrats, but also large institutions and the Crown.

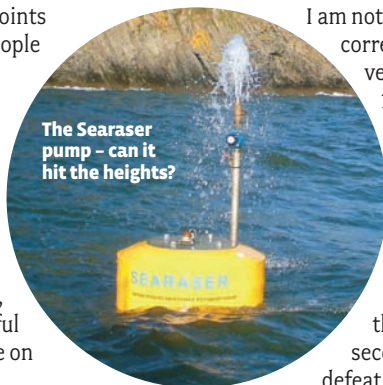
Searasing hopes

Forgive me if I'm wrong, but there may be a fatal flaw to the Searaser idea (*News Focus*, June). I was taught in physics in school that there is a limit to the height to which you can pump water upwards through a tube or pipe.

ECOLOGIST POLL

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88% Do not believe the UK Government should press ahead with plans to build new homes on floodplains



The Searaser pump – can it hit the heights?

I am not sure, but if I remember correctly that height is not very great, of the order of 10m or so. If this is so, would that be adequate to generate enough of a drop from your reservoir to make a generator work efficiently? If you have to expend some of the energy to raise the water higher through secondary pumps, it would defeat the purpose. I'd like to know if the inventor has found a way around this, as I would love your idea to work.

Dr Nathan Stein, by email

Vaccines are the problem

Further to Zayda Kebede's letter about the role of the products of pharmaceutical companies in the creation of allergies ('Be offensive', June), important and valid as it is to point this out, it also needs to be said that probably the thing most responsible for the breakdown of the immune system is vaccination.

Immunologists have admitted that vaccines cause allergies, but they are obviously taught that it is worth it. Any unbiased study of the history and theory of vaccination shows quite clearly that this is completely wrong, and increasing numbers of us are gradually realising that vaccines are part of the problem, not part of the solution.

R Bryan Essex, by email

Sonar vs cetaceans

The safety of western Scotland's whales and dolphins has been called into question following an incident involving naval sonar. This took place in Scottish waters during the major NATO military exercise known as Joint Warrior.

The Hebridean Whale and Dolphin Trust (HWDT) conducts regular boat surveys for

whales and dolphins on the west coast of Scotland, using observers and hydrophones (underwater microphones). In a single hour on 12 May, its members observed two minke whales displaying unusual and worrying behaviour. At the same time they heard military sonar on the hydrophone, sometimes so loud that they could not keep the headphones on. The whales were both moving in the same direction at high speed, regularly leaping clear of the water. This behaviour, known as 'porpoising', is more typical of dolphins and rarely seen in undisturbed whales.

Western Scotland is one of the most important marine habitats in Europe, and this is not the first time that minke whales have been involved in incidents related to naval sonar. We should all be concerned about the potential impacts that these massive and regular exercises, including Joint Warrior, are having on our marine wildlife.

Morven Summers, by email

The benefits of action

I was interested to read Oliver Muller's letter ('Sheila take a bow', May) questioning CO₂ emissions.

Now, as far as I can see, if we assume (and by the way I don't) that we have got the whole science of human-induced climate change horribly wrong and it isn't happening, then we are still faced with peak oil (and peak pretty much everything else for that matter). As a result, a lot of the steps we need to take to 'decarbonise' our economy we will need to take anyway to deal with the inevitable reduction of oil production.

If, however, we have got both really horribly wrong and we don't have either problem – which I suggest requires an immense leap of faith – then as the Rocky Mountain Institute puts it, 'energy efficiency isn't a free lunch – it is one you are paid to eat'. So there are considerable economic benefits in taking action to deal with CO₂ emissions and peak oil. In addition, several of the 'carbon-intensive' activities that would have to go incur major social and environmental costs that outweigh their benefits.

So doubt the science if you will, but consider the benefits of taking action.

John Boxall, by email

The Ecologist replies: We'd just like to thank Sheila from North Yorkshire for writing in and stimulating so much debate on this subject. We were surprised that there is still a huge spectrum of opinions on the subject of climate change, and it has been interesting and enlightening to read everyone's views.

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Food fight

Choose local over global, independent over corporate. It's time to re-engage with our food and re-evaluate the way we feed ourselves, says **Rosie Boycott**

When London mayor Boris Johnson appointed me his food adviser in 2008, many people scoffed at the idea that food could be grown in the capital. But it can – in nooks and crevices, on rooftops and disused railway banks – and there's an army of extraordinary people out there who are wonderfully enthused to take part in this new, quiet revolution to change the way we eat, as well as the role food plays in our lives.

At the end of last year, Boris Johnson and I launched Capital Growth. It was an idea stolen from Vancouver, where they are creating 2,010 new growing spaces to be completed by the Winter Olympics in 2010. We expected to get 50 spaces up and running by April, but in early May I found myself opening the 83rd, and we have about 300 waiting in the wings to join the scheme. The only requirements are that the spaces be run as community growing plots; after that it's up to the groups to do what they want. We help with small amounts of money, but large amounts of advice and connections.

I'm passionate about this project, and not just because it will help make London a nicer place to live. Food produces some 40 per cent of London's CO₂ emissions, so environmentally, the more local food we grow the better. It also helps us to make a much-needed reconnection to the magical process of growing our own, even in tiny quantities, and to bind fractured communities around a common interest. I've seen projects in London, such as one run by the Women's Environmental Network, where once-scary and rubbish-strewn swathes of concrete have been transformed into growing spaces, safe, well-looked-after areas for people to meet friends and have parties and barbecues together – all through a communal love and fascination with growing and gardening.

The more I learn about food systems, though, the more astonished I get. They are, I would venture, the most unfair and unjust systems in the world. In the second half of the 20th century – a century of such extraordinary progress in so many respects, from penicillin to the internet; a century where global food production grew by 145 per cent, which works

Rosie Boycott is a journalist, broadcaster, author, farmer and chair of London Food



out at the equivalent of 25 per cent extra for every person on the planet – we still have a world where almost two billion are starving.

How did we let this happen? We can go back to Roman times, in fact, when the basic rules of democracy were laid down, as well as the idea that citizens should have rights that were administered by the state for the common good: education, law, the military, health and so on. But food went straight under the wire

and into the hands of the free market – and it's never changed. Bristol was built on the blood of the slave trade; Tate & Lyle, Booker and other large companies were

content to hide their treachery behind our ignorance and desire for such commodities as sugar and coffee. We still do it today, though, and now have less excuse for it. Anyone who has made even the smallest effort to find out knows what pesticides do to Indian farmers, especially cotton farmers. They are also forced to compete on a world market where the US still subsidises its own cotton farmers, making it harder for growers in the developing world to make even the meanest of livings out of their crops.

I've followed one part of this story myself. Two years ago I was in South Africa, where women apple-pickers get just four per cent of the price we pay for apples in our stores. Here in the UK, we used to grow no less than 2,300 species, each one a product of its particular bit of soil, with a taste like a magical language, a provenance and a legacy. Since the second world war we've thrown it all away, grubbing up approximately 80 per cent of our orchards. Now we don't care where our fruit comes from, only whether they are able to withstand long journeys, slung around in the backs of lorries or in the holds of ships; tough enough

continued on page 84



The more I learn about food systems, the more astonished I get. They are the most unjust systems in the world



continued from page 83

to withstand the pummelling, but to hell with the flavour. And has this process improved lives in developing countries? Not that much, unless they are part of free-trade. Instead they have become our modern slaves, in the process destroying their own food sustainability. I was recently in Grenada, which is so fertile that anything would grow: yet its farms are falling apart and the island imports wheat from Canada, its people losing their own skills as farmers in the process.

According to Professor Tim Lang, food crosses no less than 19 ministries. Our most important need has been parcelled out like yesterdays fish and chips. But food is not like cars or CD players; it is a basic need and one that should never have been left to the free market to plunder like a goldmine. Monsanto now owns no less than 11,000 patents on genetically modified seeds, which translates into almost 95 per cent of global world production. Think of that – all in the hands of one company. Beef is a similar story: 81 per cent of all production is in the hands of just four processors. We currently import 95 per cent of all the fruit we eat in this country, and around 80 per cent of our vegetables. The unfairness runs right through the system, as we freely steal other countries' soil, water and labour to ensure a continuous supply of cheap food for our own consumption.

Governments have always been content to leave the supply and production of food in the hands of so few, happy that it has kept inflation down and people eating, even if what they have been eating is unadulterated crap. Not that long ago – less than 30 years – we spent some 28 per cent of our weekly shop on food. Now it's less than eight per cent. And it's that gap that has allowed us to buy flatscreen televisions and go on cheap holidays to the Costa del Sol. Food became so

cheap that when I was a newspaper editor and we wanted a laugh or were facing a day when the news was thin, we'd just ring up MPs and ask them the price of a pint of milk or a loaf of bread. They never knew. I can't say much here for my profession either, though – the other day Waitrose's head meat-buyer told me she had received a call from a journalist asking to see a herd of semi-skimmed cows.

The story of cheap food is – of course – also the story of cheap oil. Ninety-five per cent of all the food we eat has oil in it somewhere, and it takes 10 calories of oil to produce 1 calorie of food. If we all ate like Londoners we'd need three planets to keep us going. And Londoners are the greediest buyers of ready-meals in the country: Britain overall eats 49 per cent of all the ready meals produced in Europe, a sad fact of life in which I think I unwittingly played a small role when I founded *Spare Rib* in 1972. 'Don't cook, don't type,' we said... and we meant it. Life was, as they said, too short to stuff a mushroom. Our first and only offer was a dishcloth emblazoned with the words: 'First you sink into his arms, then your arms end up in his sink'.

But feminism and the desire to abandon the kitchen for the dubious delights of the workplace coincided with the rise of consumer goods and credit cards and the need for two income households, as we all became convinced that the route to spiritual wellbeing lay through buying – and then buying a whole lot more that you didn't need because you'd decided you wanted to keep up with those much-maligned metaphorical Joneses. Our loss of a proper food culture has meant that families no longer eat together, however, and the ties formed simply by families sharing a

meal have been broken. And that, I would argue, has played a big role in the troubled lives so many youngsters lead today.

Food is now making a comeback, though. Buying directly from a supplier is one of the few honest purchases you can make. Picking up a £1 t-shirt from the likes of Primark makes us feel grubby, as we know the misery that is at the end of the chain. Now I believe we're all on the most exciting journey of our lives – and quite easily the most important. It doesn't matter how you start, what matters is that you do start. The

time for talk is over and the time for action is here. A few months ago, I spoke at a rally in Parliament Square as part of a group of women demanding action on climate change. We crushed ourselves against St Stephen's Gate, blocking access and demanding decisive steps from the Government, not just empty platitudes about runways and reductions in carbon emissions. We were celebrating in part the extreme bravery of our great- and great-great-grandmothers, and what they had achieved for women like me today, but we were also saying that governments must now work to ensure that the planet is here, in a healthy state, for our great-grandchildren too.

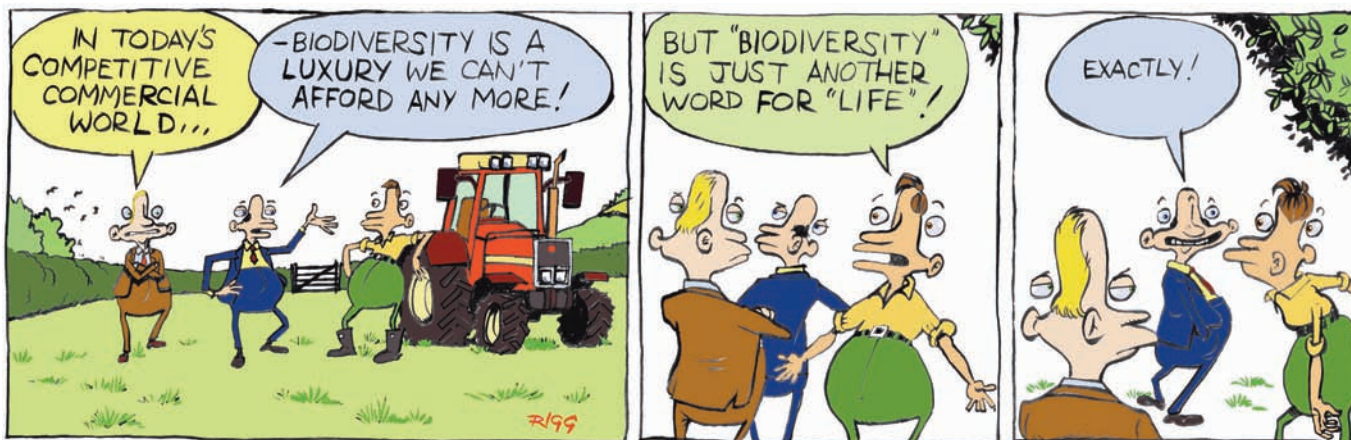
After all, we all only have one home and it's this one, the wondrous place that has mothered us for so many many aeons. Now it's time for us to mother the Earth, but this time we need to mother it for everyone – the poor and the dispossessed, the hungry and downtrodden – because no truly sustainable movement for change, which breeds resilience in us all, will ever come about unless underpinned by social justice for everyone who shares this precious space. Get out your spade and start digging!



Governments have always been content to leave the supply and production of food in the hands of so few

GOOD BUY WORLD

PETER RIGG



The climate secretary has been lauded for his coal-fired proposals, but beyond the smokescreen it's business as usual

Carry on carbon

You have to hand it to him. The climate and energy secretary, Ed Miliband, has had a good few weeks. It began when he stood up in Parliament and told the House, 'the era of unabated coal is over'. Already fondly thought-of by those on the left, Miliband Junior is increasingly the star of the moment, and seen as having the potential to be 'the one' to lead Labour out of its political crisis, particularly as one of the few heavyweight MPs not to have got his fingers caught in the till with the expenses debacle.

With his review of energy policy, he is widely credited with having craftily defused the row over proposed new coal stations such as Kingsnorth in Kent. Admired by Westminster-village-types as a political fixer in the first place, the chattering classes are now muttering that maybe he can defuse Labour's woes in much the same way.

As usual with this sort of conversation, the establishment has completely missed the point. Irrespective of how progressive Miliband is in relation to the rest of his party or the rest of Parliament, the climate doesn't care. Atmospheric make-up doesn't allow for political compromise, and what he recently announced on coal simply won't keep us within safe scientific limits on carbon.

It's true that under excruciating pressure from climate campaigners on the one hand, and giant energy corporations E.ON and RWE nPower and their regressive allies in the civil service on the other, it looks on the face of it as though Miliband just pulled off a political masterstroke. In true New Labour fashion, he argued that there is a third way, a technological solution that can throw a lifeline to the coal industry and reduce the coal industry's climate pollution. His argument is that since carbon capture and storage (CCS) technology might one day work at full scale, offering the opportunity to capture emissions and bury them under the sea, this technology should be demonstrated on a small scale at all new coal stations in Britain. He tries to reassure us with 'a clear commitment to low-carbon coal once it is proven: there will an independent judgement about when the technology is proven, and once it is, power stations will have to fit it not just on a part of the plant but to cover 100 per cent of their output'.

As you'll have spotted, there are massive, Heathrow-sized holes in this argument. Crucially, there's still no cast-iron guarantee that high emissions will be ruled out from

Joss Garman is an environmental campaigner and journalist



In true New Labour fashion, Ed Miliband argued that there is a third way. As you'll have spotted, there are massive, Heathrow-sized holes in it

day one. On the contrary Miliband says that between now and the 2020s, for every one ton of carbon pollution to be captured and stored, he'd allow three tons to carry on causing climate breakdown. What will happen in 2020 will depend upon whether it is deemed 'economically viable' and,

most importantly, whether it works at such a scale. He's prepared to gamble the climate on the basis of a 'solution' that has never been proven at commercial scale before.

So Miliband's new policy certainly doesn't mark 'the end' of the era of unabated coal. Indeed, when you remember the scientific context, it's distinctly unimpressive.

Remember when Lord Turner's Committee on Climate Change advised the Prime Minister last December on how the UK could make the legally binding cuts outlined in the Climate Act? He said no coal station – old or new – should be operating without full CCS by the early 2020s.

Lord Turner acknowledged that even if everything he recommended were implemented, things all went according to plan and we stayed within our national carbon budget – and if all other developed countries did the same – it would still only give us a 50-50 chance of staying below 2°C warming, thus avoiding the most dangerous impacts of climate

breakdown. No wonder, then, that the godfather of climate science, Professor James Hansen, goes further than Turner and advocates that no coal should be allowed without full CCS from day one.

Now look again at what Ed Miliband is proposing. Your average conventional coal station – like the one proposed for Kingsnorth – would need to capture only about a quarter of its emissions, and he makes no mention of existing coal stations such as Drax at all.

When you consider that just last summer then-business secretary John Hutton came within days of approving the Kingsnorth plans, we know the campaign is working. Huge collusion between energy department officials and E.ON has been exposed. Activists who shut down the plant were famously acquitted using a climate defence. The Women's Institute and Oxfam sailed to Kent with Greenpeace on the Rainbow Warrior, and together reframed the argument. Now, in the run-up to the UN talks in Copenhagen in December, what happens with Kingsnorth will be the test of Miliband's climate leadership – underlined by Hansen's warning that 'every ton of carbon counts'.

Having cornered him into acknowledging that business-as-usual isn't an option, now we need to win.

Retro perspective

If we don't change our ways, the Lovelock hypothesis may come to pass – that's why the informative work of the *Ecologist* is so important, says **Jonathon Porritt**

I'm not looking forward to a world without the *Ecologist* magazine. I'm sure it will continue to inspire millions online, but I still prefer my reading matter in print.

I have every issue of the *Ecologist* since its inception in 1970. Although I can't quite vouch for having read every one of them from cover to cover (it did get a bit tedious in the mid-80s), it has meant more to me over 39 years than any other publication, as an instructor, refuge, mentor, agent provocateur, confessor and inspirational companion on endless holidays and foreign trips.

It was the 'Blueprint for Survival' that fixed my early, inchoate worries about 'the environment' in 1972, and it's the *Ecologist* of the past two or three years that has made me feel most uncomfortable about the kind of 'inside-track' work I've been doing since 1992 – but particularly through the Sustainable Development Commission (SDC) since 2000.

How can I explain that? Jim Lovelock will be celebrating his 90th birthday on 26 July. His work has been featured regularly (and supportively) in the *Ecologist* since the publication of *Gaia: A new look at life on Earth* in 1979. There is no-one I admire more in terms of the insights they have brought to bear on our unfolding ecological drama – notwithstanding the fact that I believe his rabid obsession with nuclear power is a tragic – and all but unforgivable – lapse of judgement.

Lovelock came to the conclusion some time ago that it is too late to do anything about accelerating climate change. He reckons we have already put enough gas into the atmosphere to trigger any number of feedback loops in natural systems – in the Arctic, the Amazon, the oceans, the Antarctic and so on.

Even if we eliminated the use of all fossil fuels within the next decade (so he argues), and stopped cutting down all rainforests, it would still be too late to prevent those feedback loops triggering incalculably damaging impacts on human society.

If that runaway effect then becomes 'irreversible' (as in beyond the powers of humankind to do anything about it, even if

Jonathon Porritt is chairman of the Sustainable Development Commission (www.sd-commission.org.uk)



we wanted to) then this would lead to the death of more than five billion people as sea level rises by more than 10m and climate-induced disasters of one kind or another sweep the globe.

Jim Lovelock says he is 'optimistic' about the future of life on Earth, but not (obviously) about the prospects for humankind. Dismissing such 'apocalyptic optimism' is the easy bit, but being rational and applied about why he's wrong is an altogether different challenge.

Environmentalists need him to be wrong – because what conceivable justification would there be (from a big-picture perspective) in bothering about our transparently inadequate delay mechanisms if he were right? Politicians need him to be wrong – because how could they possibly cope with the explosion of rage (and possible anarchy) that would arise were he proved to be right?

So that's why all the rhetoric about the 'window of time' available to us to get things sorted becomes so pressing. If you're Lovelock, the window is already slammed shut, locked and boarded up. If you're Jeremy Clarkson, the window has been jammed open and we can continue to go through it at any time and in any way we choose, probably for ever. If you're just a regular informed citizen with environmental concerns featuring prominently in your worldview, you might reckon on there still being 'a generation' to play with.

My own window of time has been getting narrower and narrower over 35 years. The emergence of a new organisation called Onehundredmonths.org has given me some entirely arbitrary comfort that if we could still do what we need to do to establish the

foundations of an equitable, sustainable, ultra-low-carbon economy within those 100 months then we're still going to be okay. A bit of me knows that's arbitrary and possibly illusory, but it's my illusion, and I'm sticking to it.

Just eight years or so to achieve dramatic breakthroughs in citizen awareness, political will, institutional reform, behaviour change and technology shift. Against the backdrop of continuing denial, entrenched vested interests, massive political failure, worsening equity divides and so on. Exactly the kind of structural and political problems that the *Ecologist* has shone the light on over 39 years to explain why so-called 'environmental problems' can never be sustainably resolved without deep, radical shifts in our political and economic models.

Back to the SDC. The dynamics of 'inside-track' advocacy within government are familiar and reassuring. Marshal the evidence; identify the barriers; seek out the upside; mobilise whatever 'coalition of the willing' is available to you, both inside and outside the system, and, hey presto, 'the truth will set us free', and public policy will adapt accordingly.

Like hell it will. Nine hugely rewarding years as chair of the SDC have left me with conflicting emotions.

I'm full of admiration for that small band of ministers and senior officials seriously intent on shifting unwieldy, locked-in systems of governance towards marginally less unsustainable ways of creating wealth and improving people's lives.

But I'm even more full of rage at the complacent layabouts who think Jeremy Clarkson is more of an expert on climate change than their own chief scientific advisor; at the hypocrites who blithely sign up to ludicrously ambitious targets without ever willing the means to achieve them; and at the whole regiment of dumbed-down denialists who refuse, even in passing, to ask themselves whether consumption-driven economic growth – indefinitely into the future – is still the best bet in a world of collapsing ecosystems, accelerating climate change and worsening resource constraints.

So that's enough 'inside track' for me – for the time being, at least. Time to be out and about a bit more – in the true spirit of the *Ecologist*.



The *Ecologist* has been an instructor, refuge, mentor, agent provocateur, confessor and inspirational companion

What do a privatised post office and jogging have in common?
They're both inefficient, obsolete and all about the bottom line

Running out of steam

Have you noticed the alphabet soup of parcel delivery firms that have mushroomed on our industrial estates? Market competition has multiplied the number of trucks and vans labelled PDP, DHL or UPS that trek backwards and forwards on our road network, no doubt half-empty in many cases. Postal

delivery is a clear example of what an economist would call a 'natural monopoly' – something it makes economic sense to have only one of. And of course until fairly recently we had just the one: it was called the Post Office, until it passed into the hands of corporate liberalisers and became ironically mislabelled the People's Post Office.

The plethora of delivery firms must all be making profits or they wouldn't continue in business. In conventional economic terms their existence makes sense and is efficient, efficiency being defined as whether or not something can generate surplus cash. In this case efficiency has nothing to do with the level of service received by the customer, the distance we need to travel to collect parcels that arrive when we are out, the extra traffic on our roads, and so on. The degeneration of parcel delivery in what we like to think of as a sophisticated and modern economy into this state of chaos is a valuable illustration of the disasters caused when an economy focuses on financial efficiency rather than energy efficiency. It is another example of how our financialised economy is utterly divorced from the real physical systems that drive our planet.

Greens are often accused of wanting to go back to the horse and cart. I'm with Ivan Illich on this: I think going back as far as the bicycle is quite far enough. To me the bicycle is the ultimate efficient machine. It translates muscular energy into forward motion relatively painlessly, and is sufficiently

Molly Scott Cato is a reader in green economics at the Cardiff School of Management



simple in its design to allow for home maintenance. Its components are cheap, easily available and can themselves be mended. Iris Murdoch was a fan, calling the bicycle 'the most civilised conveyance known to man', and claiming that, of all modes of transport, it is the only one that remains 'pure in heart'.

The efficiency of cycling stands in stark contrast to the bizarre wastefulness of jogging. My scepticism about jogging is matched by a similar scepticism about the concepts of leisure and exercise. All three seem expressions of a decadent approach to energy that is a result of living off what Heinberg refers to as 'energy slaves'. Only the profligate use of petroleum could have resulted in a system of economic organisation where our jobs are so sedentary and physically undemanding that we have to find excuses

pointlessly to burn off energy when not working. When I meet joggers on my local cycleways I have to stop myself asking them why they don't just set up a static bike at home and connect themselves to the national grid.



I have to stop myself asking joggers why they don't set up a static bike at home and connect to the national grid

Imagine a peasant of years gone by or a farmer in today's poorer world trying

to tangle with the concept of jogging. While people like me, who are relatively puny and have spent all their lives in physically undemanding (and excessively remunerated) occupations have to be careful about romanticising manual labour, it is certainly, as Simon Fairlie has recently argued, in urgent need of rehabilitation. And we can be sure we are all going to come to know its pains and pleasures intimately as petroleum supplies dwindle. Both financial efficiency and jogging are obsolete concepts, symptoms of the economic paradigm that created mechanisms for translating fossil fuels into money. In a green economy we will learn to extract the greatest possible use from all energy expended. Our survival will depend on it.



It's all in the mind

Materialism as a scientific ideology has proved itself unworthy of the challenges we face – we must look elsewhere for life's answers, says **Rupert Sheldrake**

Credit crunches happen because of too much credit and too many bad debts. Credit is literally belief, from the Latin *credo* – 'I believe'. Once confidence ebbs, the loss of trust is self-reinforcing. The game changes.

Something similar is happening with materialism. Since the 19th century, its advocates have promised that science will explain everything in terms of physics and chemistry; science will show there is no God and no purpose in the universe; it will reveal God is a delusion inside human minds and hence in human brains; and it will prove that brains are nothing but complex machines.

Materialists are sustained by the faith that science will redeem their promises, turning their beliefs into facts. Meanwhile, they live on credit. The philosopher of science, Karl Popper, described this faith as 'promissory materialism', because it depends on promissory notes for discoveries not yet made. Despite all the achievements of science and technology, it is facing an unprecedented credit crunch.

In 1963, when I was studying biochemistry at Cambridge, I was invited to a series of private meetings with Francis Crick and Sydney Brenner in Brenner's rooms in King's College, along with a few of my classmates. They had just cracked the genetic code. Both were ardent materialists. They explained there were two major unsolved problems in biology: development and consciousness. They had not been solved because the people who worked on them were not molecular biologists – nor very bright. Crick and Brenner were going to find the answers within 10 years, or maybe 20. Brenner would take development and Crick consciousness. They invited us to join them.

Both tried their best. Brenner was awarded the Nobel Prize in 2002 for his work on the development of the nematode worm *Caenorhabditis*. Crick corrected the manuscript of his final paper on the brain the day before he died in 2004. At his funeral, his son Michael said that what made him tick was not the desire to be famous, wealthy or popular, but 'to knock the final nail into the coffin of vitalism'.

He failed. So did Brenner. The problems of development and consciousness remain unsolved.

Rupert Sheldrake is a biologist and author of 80 scientific papers and 10 books, such as *A New Science of Life* (www.sheldrake.org)



Many details have been discovered, dozens of genomes have been sequenced and brain scans are ever more precise, but there is still no proof that life and minds can be explained by physics and chemistry alone.

The fundamental proposition of materialism is that matter is the only reality. Therefore consciousness is nothing but brain activity. Among researchers in neuroscience and consciousness studies, however, there is no consensus. Leading journals such as *Behavioural and Brain Sciences* and the *Journal of Consciousness Studies* publish many articles that reveal deep problems with the materialist doctrine. For example, Steven Lehar argues that inside our heads there must be a miniaturised, virtual reality, full-colour, three-dimensional replica of the world. When we look at the sky, the sky is in our heads. Our skulls are beyond the sky. Others, like the psychologist Max Velmans, argue that virtual reality displays are not confined to our brains; they are life-sized, not miniaturised. Our visual perceptions are outside our skulls, just where they seem to be.

The philosopher David Chalmers has called the very existence of subjective experience the 'hard problem' of consciousness because it defies explanation in terms of mechanisms. Even if we understand how eyes and brains respond to red light, for example, the quality of redness is still unaccounted for.

In biology and psychology, the credit-rating of materialism is falling fast. Can physics inject new capital? Some materialists prefer to call themselves physicalists, to emphasise that their hopes depend on modern physics,

not 19th-century theories of matter. But physicalism's credit-rating has been reduced by physics itself, and for four reasons.

First, some physicists argue that quantum mechanics cannot be formulated without taking into account the minds of observers; hence minds cannot be reduced to physics, because physics presupposes minds.

Second, the most ambitious unified theories of physical reality – superstring and M theories, with 10 and 11 dimensions respectively – take science into completely new territory. They are a shaky foundation for materialism, physicalism or any other pre-established belief system. They are pointing somewhere new.

Third, the known kinds of matter and energy constitute only about four per cent of the universe. The rest consists of dark matter and dark energy. The nature of 96 per cent of reality is literally obscure.

Fourth, the cosmological anthropic principle asserts that if the laws and constants of nature had been slightly different at the moment of the Big Bang, biological life could never have emerged, and hence we would not be here to think about it. So did a divine mind fine-tune the laws and constants in the beginning? Some cosmologists prefer to believe that our universe is one of a vast, and perhaps infinite, number of parallel universes, all with different laws and constants. We just happen to exist in the one that has the right conditions for us.

In the eyes of sceptics, the multiverse theory is the ultimate violation of Occam's Razor, the principle that entities should not be multiplied unnecessarily. Even so, it does not succeed in getting rid of God. An infinite God could be the God of an infinite number of universes.

Here on Earth we are facing climate change, great economic uncertainty and cuts in science funding. Confidence in materialism is draining away. Its leaders, like central bankers, keep printing promissory notes, but it has lost its credibility as the central dogma of science. Many scientists no longer want to be 100 per cent invested in it.

Materialism's credit crunch changes everything. As science is liberated from this 19th-century ideology, new perspectives and possibilities will open up, not just for science, but for other areas of our culture dominated by materialism. And by giving up the pretence that the ultimate answers are already known, the sciences will be freer – and more fun.



There is still no proof that life and minds can be explained by physics and chemistry alone

A Big 'Thank You' to all our Customers

Ask most people how much money has been committed globally on behalf of taxpayers to save the imploding banking system and you'll probably get a range of answers in billions. But the true numbers are so big that most of us who are struggling to juggle money for food, shelter and travel would find them difficult to grasp. According to recent analysis by Bloomberg News, in the US the amount of taxpayer money being lent, spent or guaranteed in order to prevent systemic collapse is, as of 31 March, in the region of \$12.8 trillion.

According to a *Business Week* report in

\$16 trillion

April, EU governments have committed €3 trillion (\$4 trillion) in guarantees or cash injections to bail out banks in the wake of the global financial crisis. The money has been spent on 'guarantee umbrellas, risk shields and recapitalisation measures for the financial sector...'

And then swine flu hit and the stories of bank bailouts went a bit cold. The truth is nobody knows exactly how much taxpayer money has been committed to shore up a system that might best be left to collapse. There is no accountability, no transparency. And no guarantee it won't happen again.

Your chariot awaits

Giving up your car isn't to abdicate from a life of luxury and freedom as king of the road – you'll save time, money and discover a more regal existence without one

I'm working on a new book called *The Idler's Guide to Thrift: How to escape from capitalism and live like a king. It will be a handy and severely practical guidebook that will show you how to escape the clutches of the big corporations, either as a worker or a consumer, and recreate your own low-cost, high-fun life.*

I mentioned recently the gigantic savings to be made when you quit your job ('We have to let you go', May). The second enormous saving is in the realm of transport, and the first thing to do here is to get rid of your motor car.

Government figures put the average annual spend on a motor car at more than £5,000, taking into account the garage costs, the cost of purchase, roadside recovery membership, the road tax, the MOT, the insurance and, of course, the fuel. That's roughly £1 per mile for most people. And when you take into account the time spent on the car, the average speed that the car delivers is shocking. Add the number of hours worked to get this money to the time actually spent on the road, and you get a figure of 650 hours. That works out at

eight miles per hour. Clearly it would be quicker and cheaper to travel by bicycle.

That's not to mention the monumental headache of owning a car: the trips to the garage, the breakdowns, the bump-starting, the parking problems. And of course there is the ecological impact to consider – what used to be called pollution.

The alternatives, however, far from being in any sense ascetic, are truly regal. What do you do instead of owning a car? You get cabs, you hire cars, you get the train or coach, you cycle, you walk and you stay at home.

Cabs I think are an excellent system. The cab man takes away all the headache of driving for you, and will deposit you at your destination. It is a convivial system: mostly you will end up chatting and thus passing the journey in a much more interesting manner than listening to the radio. The cab driver has provided for himself flexible and reasonably paid self-employment, so you do not have that nagging sense of exploiting another human being.

Car hire is also a wonderful invention. It always seems surprisingly cheap to me, in

contrast to owning a car, which is always shockingly expensive. At Easter we hired a Vauxhall Astra for a week at a cost of £150. Even hiring that car every week for a whole year would hardly cost more than your own car's annual cost. And the hire car is absolutely headache-free: it always works and you don't have to take it to the garage or fill in vehicle tax returns online.

Trains, it is true, are costly – but you don't have to drive them. You can sleep on them, you can read, you can eat, you can daydream. I love gazing out of the window at the gardens and allotments. It also has to be said that the service, on my line at least, is excellent, and in seven years of going up and down to London once a month, the train has only been properly delayed once. As a cheaper alternative, there is also the less glamorous but still relatively luxurious coach.

Bicycles are a great joy. You will save a fortune on commuting costs by cycling to your place of work, and you will provide yourself with health-giving exercise and a blissful sense of freedom, in stark contrast to, for example, sitting on the London Underground, which was memorably described by William Morris in *News From Nowhere* as that 'stinking vapour bath of

discontented humanity'. The bicycle is also far quicker than the car or the commuter train.

Walking is also surprisingly quick in cities. When in London I will often walk from Paddington to Piccadilly Circus, and always find this to be a huge pleasure. When walking I am never late. When you walk, you see things. You think. You can literally stop to smell the flowers. Again there is something regal about walking: you can imagine yourself to be on a royal inspection, like Prince Charles, with your hands behind your back, politely peering.

Finally, simply staying at home is very cheap and very cheerful.

Above all the motor car is a terrible bind. Sell it and save time and money, and embrace a new level of luxury.



The alternatives, far from being in any sense ascetic, are truly regal. What do you do instead of owning a car? You cycle, you walk and stay at home



Tom Hodgkinson is the editor of *The Idler* and author of *How to be Free* (Hamish Hamilton, £14.99)

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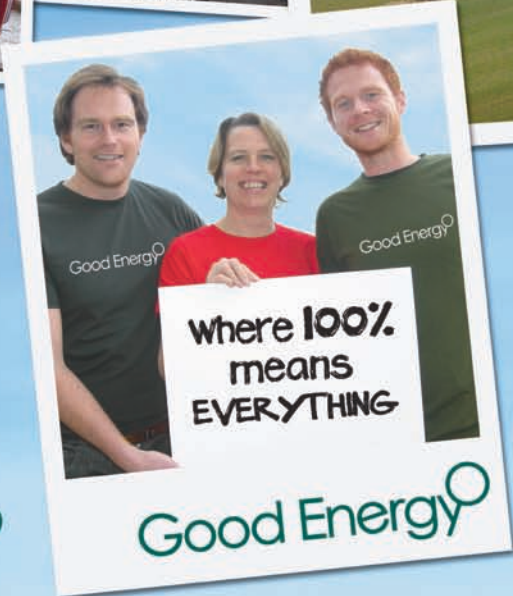
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