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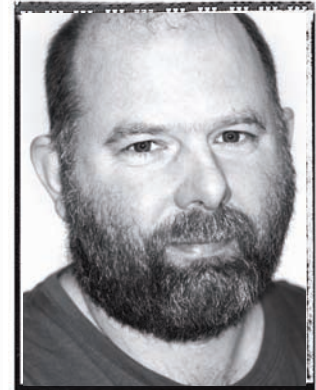
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# ECOLOGIST

THE WORLD'S LEADING ENVIRONMENTAL MAGAZINE

APRIL 2009



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# Visionaries



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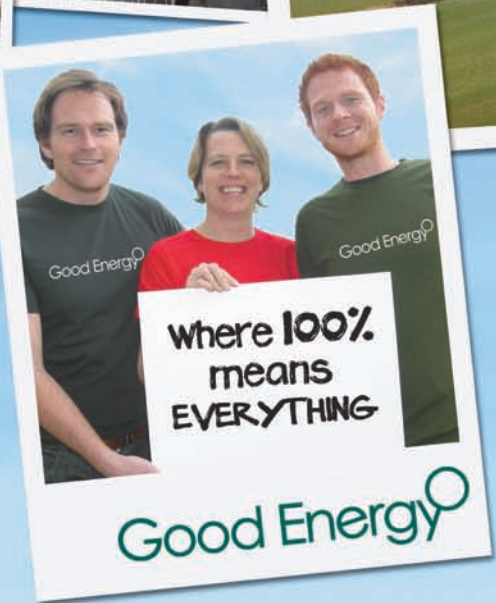


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# Fear of the now

**Don't believe what you read in the papers. It's not about the economy, or energy, or pollution or population. There is only one crisis: the crisis of transformation. I was reminded of this as an old friend, Rachel's *Democracy and Health* newsletter, published its final edition last month. Rachel's was a deep pool in an increasingly shallow world and it will be greatly missed.**

The newsletter revisited a 1969 paper, published in the journal *Science*, which posited that it wasn't any single future crisis that would bring us to our knees, but the sheer speed with which multiple crises would be presenting themselves if we didn't change course. Of course the *Ecologist* has been saying much the same thing for all these years too.

How is it, when the facts have long been at our fingertips, when it was perfectly possible to see where our unrestrained and outrageous selfishness, violence and stupidity was leading, that we have failed to act? What have we been doing all these years to have missed the boat so comprehensively?

The answer lies not in our fear of the future but in our fear of the here and now. It's the fear of our peers, of doing things differently, of speaking out, and worst of all, of being rejected by the tribe for doing so. It's understandable to want to belong – we're only human after all. But we have to ask, just what is it we belong to these days? And why?

True individuals are often seen as a threat, and yet individuals strengthen the tribe, not weaken it. This month's edition features profiles of 10 extraordinary individuals. They aren't famous; instead what links them is their vision of a better world and the courage of their convictions about how things could be if we could only get some critical mass behind the idea of change.

The pain of transformation is hitting us all on both the personal and the collective levels. The multiple crises we face require a radical response that can't be met simply with technology or any other kind of magic that

'someone else' is responsible for. It must also encompass the realms of individual human consciousness and potential. Everyone is frightened, but like young children playing hide-and-seek, so many seem to be closing their eyes and hoping the crisis won't find them. In the meantime they keep flying, keep consuming, keep engaging in behaviours and relationships and addictions that are no longer valid, no longer support who they are and no longer contribute to their own or the greater good. Worse, they keep arguing the same old arguments against change as if the narratives of our lives are fixed, and are completely disconnected from each other and from the greater whole.

In my years of campaigning for evidence-based healthcare, the biggest hurdle was always an unwillingness to embrace change. Doctors would continue to perform the same pointless surgeries, recommend the same useless tests and prescribe the same dangerous drugs because that is what they had always done. To change that behaviour was, to them, an admission that they had founded their beliefs and behaviours – indeed, their lives – on something less than solid. That admission was too painful to face, so many chose to continue to be a part of the problem rather than take a personal or professional inventory and become a part of the solution.

As the psychoanalyst RD Laing said, 'the only pain that can be avoided is the pain that comes from trying to avoid pain' – our own and others. Let's wake up to the moment in which we find ourselves, embrace it even if it is painful, and live it as if life really mattered.



**The pain of transformation is hitting us all on both the personal and the collective levels**

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# Battling the biopirates

A new database aims to prevent unscrupulous pharmaceutical and biotechnology companies patenting drugs based on traditional Indian medicines and practices

**The Indian government has made a vast database of 200,000 traditional Indian remedies, plants and practices accessible to the European Patents Office, in a move that campaigners and officials hope will stem the tide of 'biopiracy', whereby Western pharmaceutical or biotechnology companies patent drugs derived from traditional medicine.**

By opening up the database – which took 200 researchers eight years to compile, trawling through ancient Ayurvedic, Unani and Siddha texts – India has effectively made its store of wisdom 'public property', which can now be accessed and used by anyone, but patented by no-one.

Officials behind the project, which is known as the Traditional Knowledge Digital Library (TKDL), now hope that by preventing pharmaceutical companies from using patents to extract high profits, a range of cheap drugs could be developed. Indian researchers are already collaborating with a US company to produce a cheap drug, extracted from traditional remedies, to tackle

psoriasis. The new drug is expected to reduce the cost of treatment by more than 99 per cent.

The library will also eventually include the 1,500 *asanas*, or poses, used in yoga. Attempts have already been made in the US to patent asanas, a practice Vinod Kumar Gupta, head of the TKDL, describes as 'simply wrong'.

The database is a success not only in terms of its scope – it will also save India billions of rupees in lengthy court cases. Official estimates put the cost of the legal fees of overturning patents filed on medicines created from the turmeric root and the neem tree at in excess of \$5 million. In Europe alone there have been at least 285 patents for medicines derived from plants used in traditional Indian healing routines.

Dr Patricia Loughlan of the University of Sydney told Australia's ABC news service that she was confident the scheme was watertight.

'Yes, it will work,' she said. 'It is perfect. It is not in any way defying the patent system. That is what in a way is so clever about it... It is using what is in the patent system itself.'

## PREVIOUS BIOPIRACY OF INDIAN KNOWLEDGE

**TURMERIC** The well-known culinary spice had been used for centuries to heal wounds and rashes, before two expatriate Indians at the University of Mississippi were granted a patent in 1955 on the use of the root in healing. It took 44 years for it to be overturned.

**NEEM** Extracts from the leaves of the neem tree have traditionally been used to repel pests and fungal diseases from crops, as well as for cold, flu and even malaria relief. In 1994, the European Patent Office awarded chemicals company WR Grace a patent on neem oil as a crop anti-fungal agent. After a protracted appeal by Indian farmers and NGOs, the patent was overturned in 2006.

**BASMATI RICE** The US company RiceTec was awarded a patent on a rice strain and breeding techniques in 1997 by the US Patent Office. Indian investigators realised that the strain was genetically extremely similar to basmati rice, and could have been used to challenge Indian imports if enforced. In 2000, RiceTec was forced to amend its patent.



## 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 [www.theecologist.org/news](http://www.theecologist.org/news) to read and follow up...**

» Most councils value their public parks at a mere £1, says the Commission for Architecture and the Built Environment

» Campaigners give cautious welcome to Government's Heat and Energy Saving legislation

» Each hectare of the Amazon is worth at least \$426 a year to humanity, says WWF report

» Personal Carbon Quotas need to be introduced at a 'community scale', new report from the RSA concludes

» The new Indonesian EcoLabel, which certifies sustainable timber, is greenwash according to local groups

» Traffic pollution can affect children's genes in utero, making them more likely to develop asthma

» National Trust and British Waterways make more allotment plots available to vegetable-growers

» Biotechnology companies are thwarting safety research on GM crops, says coalition of scientists

» Conservation is threatened by the public's inability to gauge environmental degradation, say scientists

## NEWSLETTER

See [www.theecologist.org](http://www.theecologist.org)

» Weekly news, exclusive web articles, images, videos, podcasts and previews of content from the magazine, our weekly e-newsletter is vital reading for those who can't wait for the next edition...

PHOTOGRAPH: GETTY IMAGES

# Wales leads GM fight

**'Restrictive policy approach' and crop register shifts financial and environmental risks of GM to growers and biotech companies**

**Campaigners are cautiously hopeful that new regulations for GM crops set out by the Welsh Assembly Government will help keep the country free of genetically modified plants, and set a high bar for future legislation.**

Proposals unveiled in February by rural affairs minister Elin Jones promise to maintain 'as restrictive a policy approach to GM as possible within our legal obligations', in particular by shifting the financial and environmental risks of GM cultivation to the growers and biotech companies themselves.

The plans will include measures to impose strict liability for any contamination of neighbouring crops on GM crop growers, and will require farmers to consult with their neighbours to make sure there are 'significant' separation distances between GM and conventional or organic crops. There are also proposals to require buffer zones and pollen barriers around fields.

Contrary to attempts by Westminster to

keep the location of GM crop trials secret, the Welsh Assembly Government plans to create a GM crop register, with public access to planting information at least three months before sowing. The minister also plans to consult on the possibility of GM-free zones within the country.

Nodding to the conclusions of last year's International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) report, Jones said:

'The debate on the potential role GM crops have to play in meeting food security has increased. I do not believe there is any clear evidence that GM crops do have a role to play.'

Campaign group GM Freeze welcomed the proposals, describing them as 'a clear advantage to Welsh farmers who want to produce quality products in an environmentally friendly way'. Other groups were more cautious in their optimism, however, warning that the devil would be in the detail of the consultation.

Meanwhile, scientists are demonstrating that conventional breeding is a much more rapid tool for developing crops for the future than genetic modification.

Scientists at the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO), the University of Zurich and the International Maize and Wheat Improvement Center have identified a gene that naturally occurs in some wheat plants, giving them resistance to leaf rust, stripe rust and powdery mildew, diseases that usually require heavy fungicide applications to control.

Using marker assisted breeding techniques, where the gene is tracked but not altered, the scientists are hoping to breed strains of wheat resistant to the diseases. They have already established that plants with the gene have remained at least partially resistant to rust for more than 80 years.

## Climate coalition adds 'dirty nine' to business blacklist

**US-based sustainable investment coalition Ceres has added nine companies to its 'Climate Watch' list, under concerns that the businesses are failing to act on tackling their greenhouse gas emissions and are undermining their own long-term competitiveness.**

The companies – largely a line-up of oil and energy concerns – also included the recession-struck General Motors, singled out for stonewalling investors' requests to develop climate-related business strategies, and for suing the state of California for attempting to introduce clean air standards.

'These Climate Watch companies are ignoring a major business trend that will influence their competitive positioning for years to come,' said Mindy Lubber, president of Ceres. 'Given the political shift in Washington, all companies should be minimising climate risks and maximising clean energy opportunities. Companies that miss this trend are setting themselves up to fail in the 21st-century low-carbon economy.'

### THE CLIMATE WATCH LIST

■ **CHEVRON** For its extensive investments in the oil sands of Alberta, Canada, and for resisting shareholder requests to disclose potential financial risks associated with the carbon-intensive project that encompasses millions of acres.

■ **CONSOL ENERGY** CONSOL is the US's largest bituminous coal producer.

■ **EXXONMOBIL** ExxonMobil has been unresponsive to investor requests for a decade regarding strategies intended to meet growing demand for diversified clean energy sources.

■ **GENERAL MOTORS** Investors have a long, unsuccessful history of filing shareholder resolutions with General Motors and trying to engage with the company on climate-related business strategies.

■ **MASSEY ENERGY** The Virginia-based coal company continues to resist shareholder resolutions requesting the company to develop and disclose a strategy for responding to climate change.

■ **STANDARD PACIFIC** Unlike other leading homebuilders, Standard Pacific has for the past three years opposed shareholder requests to disclose its strategies and performance on energy efficiency and other climate-related issues.

■ **CANADIAN NATURAL RESOURCES LTD** One of the largest and most established producers active in Canada's oil sands, the Calgary-based company has refused to meet with investors on the issue of climate change, and, unlike other oil companies, it has not made any renewable energy investments.

■ **SOUTHERN** The US's largest electric power producer, which emits more than 160 million tons of CO<sub>2</sub> emissions a year, has balked at shareholder resolutions over the past several years asking it to set GHG reduction targets.

■ **ULTRA PETROLEUM** Houston-based Ultra has resisted shareholder requests for the past three years to disclose its strategies for addressing climate change, despite relatively strong shareholder voting support.

# Twenty-six per cent of Britons are now growing their own food, with a further one in 10 considering starting, according to research by DIY chain B&Q

## LET ECO BATTLE COMMENCE: FORMER BUS DEPOT ARRIVES IN EAST SUSSEX FOR NEW LIFE AS SOLAR RESEARCH CENTRE

It may not look like much, but the skeleton of this 17-sided office block is, in fact, an impressive experiment in recycling.

The building – originally a bus-mechanic training centre at Coventry City College – was due for demolition in 2008 to make way for housing. Geoff Fox, director of renewable energy business Solar UK, saw the building on eBay, and agreed to buy the entire structure to create a solar research and development centre.

Disassembled down to its doorknobs, the whole structure was transported to Battle, East Sussex, where it is currently being rebuilt. Due for completion this summer, it will reportedly be the only 17-sided building in Europe.

The foundations have been designed so that no material left the site during construction. Underfloor insulation has been salvaged from a former industrial refrigeration unit at Gatwick airport, rainwater will be collected in a moat



and electricity and hot water will be provided from renewable sources. See <http://tinyurl.com/aqax4a>

## IN BRIEF

### Cost of coffee

It's fairly well known that coffee farms can have a positive effect on biodiversity: because the plants are often grown in the shade of trees, multiple species can create thriving habitats.

But coffee grown in an existing forest is a different story, according to botanists at Stockholm University, Sweden.

'[Contrary to] the positive role of coffee as a creator of living environments in the open cultivated landscape, our research shows that the higher the density of coffee in the forest, the fewer species of forest birds can be found there,' says Kristoffer Hylander, one of the researchers.

### Incredible bulk

It may not be pretty but it can be green. An organisation in the US is trying to raise awareness of the advantages of buying goods in bulk, reducing packaging, costs, transport and consumer food waste.

'Bulk is Green', an initiative developed by executives in the natural foods sector, wants bulk goods to be sold in shops.

'Bulk gives the option to buy in precisely the quantity the consumer wants,' said Jim Clemens, the group's director. 'For example, a consumer can buy one serving of pasta or, if they have a large family, a kilo of rice. It is much more flexible and there is less consumer waste.' See [www.bulkisgreen.org](http://www.bulkisgreen.org)

### Cataleptic converters

Four prominent environmentalists announced in the *Independent* newspaper in February that they are now in favour of nuclear power, despite previously opposing the technology.

Environment Agency chief Lord Chris Smith, former Greenpeace director Stephen Tindale, Green Party activist Chris Goodall and author Mark Lynas said that their individual decisions were on a 'least worst' basis, with nuclear power a better option than dangerous climate change. (See *Comments*, page 82.)

Their announcement came with news that the new generation of nuclear reactors slated for Britain could produce even more dangerous emissions in the wake of an accident; that power station operator Magnox was fined £400,000 for allowing radioactive leaks at the former Bradwell nuclear power station; and that the new owners of Sellafield had placed an advert in a local newspaper asking if anyone could remember what nuclear waste had actually been placed in the dump between 1960 and 1980.

# Ship... there goes my profit

**Half the world's international shipping industry would be out of business if it were forced to pay for its true environmental impact, a new study has shown.**

Analysis by environmental consultancy Trucost and the European Sustainable Investment Forum has revealed that the health and environmental damage caused by emissions of carbon dioxide, particulate matter, sulphur and nitrous oxides by shipping amounts to some €7.7 billion each year – enough to lead to a pre-tax loss for six global shipping firms if the costs were internalised.

Overall, the industry's pre-tax earnings would decline by 69 per cent, Trucost found.

The report should act as a wake-up call for an industry that has previously been seen to be taking positive action on environmental issues.

'Given the announcement of plans to set new emissions caps by the International Maritime Organization (IMO) and the European Commission, these environmental impacts present a significant risk to valuation for many shipping companies,' said managing director of Trucost, Dr Richard Mattison.

The report also highlights areas for improvement within the industry, including using cleaner marine fuels, employing a 'cradle to grave' approach when building and dismantling ships to avoid exposing low-paid workers to hazardous chemicals in breaking yards, and improving worker pay and conditions.

A rise in costs for the industry would be likely to drive up the price of imported goods. The shipping industry currently transports more than 90 per cent of global and European external trade.

# UN agrees mercury emissions cut

**An end to rising levels of global mercury pollution could be in sight, following an international deal to reduce mercury emissions at a meeting of the governing council of the United Nations Environment Programme (UNEP).**

The agreement, which has been signed by more than 140 countries, sets out plans to cut emissions of mercury from coal-fired power stations, as well as to reduce the use of mercury in gold mining, in thermometers and in certain light bulbs, as well as in paper and plastic production.

Executive director of UNEP, Achim Steiner, said that the deal was the product of seven years of negotiations.

'Only a few weeks ago nations remained divided on how to deal with this major public health threat, which touches everyone in every country of the world,' he said. 'Today we are united on the need for a legally binding

instrument and immediate action towards a transition to a low-mercury world.'

His comments referred to vacillation by the US administration, which under President Bush had favoured a mercury 'trading system', whereby permits to emit mercury, like carbon, could have been bought and sold.

Following prolonged pressure by 17 states, one city and a coalition of environmental groups, the Obama administration dropped the plan and now appears to favour simple regulation of mercury emissions.

'Mercury, because it is so toxic, is not a pollutant amenable to trading,' said James Pew, staff attorney at Earthjustice in Washington, DC.

Some 6,000 tonnes of mercury are released into the environment annually, of which 2,000 tonnes come from power stations and coal fires. UNEP research shows that every kilogram of mercury removed from the

environment has environmental, social and health benefits up to the cost of \$12,500. The World Health Organization says there is no safe limit for mercury in the body.

■ Government data has revealed that there is a huge stockpile of ozone-depleting and greenhouse gases contained in building insulation installed before 2004.

Older insulation foam frequently contains either chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs), with a global warming potential of as much as 340 million tonnes of CO<sub>2</sub> – more than half the UK's annual emissions.

Defra is said to be taking the issue 'very seriously', and has commissioned new research, but the Scottish Environmental Protection Agency (SEPA) told the *Sunday Herald* that 'no-one is taking responsibility' for the problem.

## Global warming drives fish poles apart

**Fish populations and marine invertebrates could shift towards the poles at a rate of between 45 and 59 kilometres each decade as they flee the effects of climate change, new research has revealed.**

Using a new computer model, scientists at the University of East Anglia, Princeton University and the University of British Columbia looked at how distributions of marine species would change as warmer waters affect living conditions and the availability of prey.

They found that as species push polewards, the availability of already endangered Atlantic cod in the North Sea may fall by more than 20 per cent, while European plaice, which currently lives in more southerly water, may increase by 10 per cent. Generally, Nordic countries will see an increase in fish stocks, whereas the less-industrialised countries of the South will suffer the biggest decline.

The scientists also said that as species disappear from some areas (known as a 'local extinction') and invade other areas,

marine biodiversity could be heavily disrupted. They added that their projected rates of fish movement towards the poles 'may be considered conservative'.

'Our research shows that the impact of climate change on marine biodiversity and fisheries is going to be huge,' said Dr William Cheung, lead author of the paper. 'We must act now to adapt our fisheries management and conservation policies to minimise harm to marine life and to our society.'

■ The *Independent on Sunday* has revealed that the Government is watering down plans to set up marine reserves around the nation's shore.

When the Marine bill was announced in 2008, ministers promised to establish 'highly protected marine reserves', where fishing and off-shore drilling for oil would be forbidden.

But the draft text of the bill reveals the protected reserves have been downgraded to less well-protected 'conservation zones' that may be subject to 'economic considerations'.

## Think disclosure

**We need to have a long, hard think about think-tanks. That's the opinion of US government expert JH Snider in an article published by website Politico.**

Snider, an academic and the founder of democratic accountability website *isolon.org*, argues that to maintain charitable status, think-tanks should be forced to disclose all their donors and publish ethical guidelines, acknowledging any conflicts of interest.

Snider's call was made just weeks before UK charity Sense About Science published a document entitled 'Making Sense of GM', presented as a dispassionate look at the science of genetically modified crops.

But Sense About Science, whose declared funders include a range of biotechnology and pharmaceutical companies, was immediately embroiled in accusations it had tried to pass off the report's authors as independent scientists.

Campaign group GM Watch pointed out that one of the authors, Professor Vivian Moses, was presented simply as 'an emeritus professor of microbiology at Queen Mary and Westfield College', who was interested merely in 'communicating science to the public'. It failed to mention that Moses is also the chairman of CropGen, an active GM lobby group that receives its funding directly from the industry.

Of the pamphlet's 28 contributors, eight were sourced from the John Innes Centre. This was acknowledged; the funding the Centre receives from the industry was not.



**‘Consumerism has been a wonderful model for growing-up economies in the 20th century. Is that model fit for purpose in the 21st century, when resource shortage is our biggest challenge?’**

Former Government chief scientist Sir David King in a lecture to the British Humanist Association

## Renewables? Not quite...

**Renewable energy might not be as ‘renewable’ as it first appears, according to experts.**

Speaking at the *Financial Times* Energy Conference in February, and reported in *New Scientist* magazine, Supratik Guha, a senior semiconductor scientist at IBM, warned that the metals needed to make solar panels more efficient were extremely rare.

One of these metals, indium, is present at concentrations of only 0.25 parts per million in the Earth’s crust, and demand for the element has pushed prices to \$1,000 per kilogram.

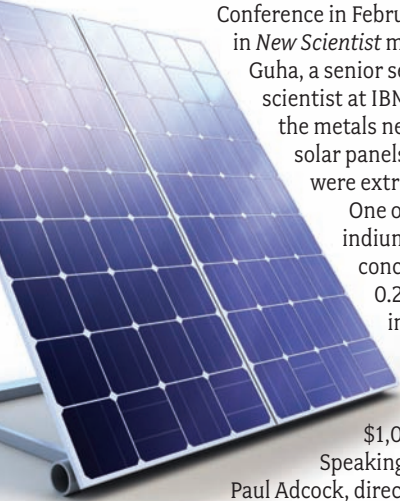
Speaking at the same event, Paul Adcock, director of research and technology at UK fuel-cell manufacturers

Intelligent Energy, warned of the future challenges posed by fuel cells’ reliance on platinum – a metal that is even less abundant than indium.

But there are signs that engineers are beginning to think laterally about the use of renewable technologies.

Aberdeen-based Green Ocean Energy has developed a wave-energy device designed to attach to an offshore wind turbine, so taking advantage of existing foundations and power cabling.

And writing in the *Times* newspaper, Professor Seamus Garvey of the University of Nottingham has suggested that wind turbines should be redesigned to feature four large blades and four shorter ones, using the larger ones to cycle pistons which would compress air. Some of this compressed air would be used immediately to generate electricity; the rest would be stored to produce energy during periods of peak demand.



## 30 years ago

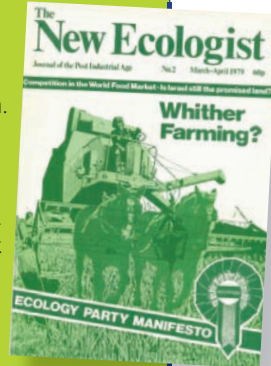
**Ecologists have to some extent only themselves to blame if they have a bad name in conventional farming circles.**

By referring too often to the idyllic life of hunter-gatherers, by making unfavourable comparisons between the conditions of 20th-century rural life and that of our ancestors, they have given the impression that they have never heard of the grinding poverty of many rural populations throughout history.

Furthermore they have appeared to regard modern farmers as charlatans and knaves, and to seek the solutions to today’s problems in recreating the past. Nothing could be further from the truth.

What concerns us is the future of agriculture now, and in the long term; what we need to search out are the best methods of achieving thriving rural communities, not based on imitations of the past, but using what is best in our traditional heritage and most useful in modern soft technology.

**Ruth Lumley-Smith, ‘In Double-Harness’, *The New Ecologist*, March-April 1979**



## ‘Flatulence tax’ a lot of hot air, say Danish cow farmers

**When a suggestion arose in 2008 that the US Environmental Protection Agency (EPA) was considering a ‘flatulence tax’ on the methane burps from cattle, there was such an uproar from the country’s farmers that the EPA had to issue a statement hastily backing away from the idea.**

Now, it seems, the Danish government might be prepared to look at the idea more seriously. In February, the country’s tax commission published proposals to levy an €80 per cow tax on account of the animals’ contribution to global warming.

Like their US counterparts, Danish farmers have reacted angrily to the idea, arguing that a tax wouldn’t change the animal’s behaviour and would lead to an increase in costs. But the government argues that because a cow produces some four tons of

greenhouse gases every year, it is more polluting than the average car (2.7 tons), and should be subject to taxation.

In the UK, meanwhile, chocolate giant Cadbury has announced it is working with its dairy farmers to reduce methane production from their herds, after a Carbon Trust study revealed that 60 per cent of the greenhouse gas emissions from the company’s chocolate came about as a result of milk production.

Among the recommendations Cadbury has made are improving cattle health to increase the rate of milk production, reducing fertiliser use on crops and reducing fibre in the diet, but increasing levels of starch – changes that are thought to lead to a fall in methane production.

The Soil Association reacted sceptically

to Cadbury’s announcement, warning that feeding the animals increased amounts of starch from maize or cereals would simply displace emissions to the fertilisers and machinery used to grow those crops.



# Good news for newts

An ambitious project aims to create half a million ponds over the next 50 years. If it succeeds, a vital ecological link will have been restored to the British countryside. **Alex Rolandi** reports

**For centuries, a pond was an integral part of a village: a supply of water both to animals and people, sometimes a supply of food, and nearly always a haven of biodiversity.**

During the past 100 years, however, more than half of Britain's ponds have disappeared. Water table reduction and agricultural development have played their parts, as has the introduction of mains water.

Those that remain are often in a sorry state: sediments, fertilisers and pesticide runoff affects about 90 per cent of rivers, streams, lakes and ponds, inevitably affecting the wildlife that still relies on these habitats. The 2007 Countryside Survey found that only eight per cent of Britain's remaining ponds are in good condition.

But ponds are once more beginning to gain recognition for the vital role they play in a fragile environment.

Since 2007, ponds that meet one of five criteria – such as being of high ecological quality or supporting species of high conservation importance – are now considered 'priority habitats' under the UK's Biodiversity Action Plan, and are listed under section 41 of the Natural Environment and Rural Communities Act.

'You might think that ponds are pretty small and insignificant compared to rivers and lakes,' says Ruth Welters of Pond Conservation, 'but ponds are actually really important for a wide variety of wildlife.'

The Biodiversity Action Plan is an initiative to sustain and improve biodiversity in the natural world. There are now 82 species associated with ponds on its list, including a variety of vegetation, tadpole shrimps, toads, great crested newts, the southern damselfly, a variety of beetles, bats, birds and even grass snakes. 'These plants and animals need clean water in order to thrive,' says Welters.

Due to loss of habitat, however, some of these species are dwindling. The Hull Biodiversity Action Plan found that the great crested newt's population has suffered a major decrease. An estimated 40,000 of its breeding ponds have disappeared over the past century.

The British Dragonfly Society recently discovered that 39 per cent of 36 dragonfly species are waning because of climate change, competition and habitat loss. A majority of species appear to be on the move. Dragonflies,

whose larger ancestors inhabited the planet long before any ape, are displaced as their homes are destroyed or polluted.

Last February, in an attempt to reverse the decline, Pond Conservation launched the Million Ponds Project, the result of many years of research into the degeneration of ponds.

With help from major landowners, this ambitious project is set to change the British landscape by creating 500,000 ponds in 50



The Million Ponds Project aims to help pond life, not treat it as such

years, returning the number to the one million it was a century ago. 'It's a complete shift from what people have been doing in the past,' says Welters, referring to the strenuous work of improving and maintaining current water bodies.

All new ponds created in the project will be in areas free from pollution and future development, on land owned either privately or by organisations such as the Wildlife Trust, the Forestry Commission, the Defence Estates and the Ministry of Justice.

'The Million Ponds Project will be creating new networks of ponds, which will reduce habitat fragmentation and isolation,' says senior freshwater ecologist Dr Pascale Nicolet, project manager of Pond Conservation. 'Our policy of creating wetland mosaics or pond complexes, with water bodies of different depths and permanence at a single site, will

provide habitats that function well whatever the climatic conditions.'

Although a simple idea conceived by a small organisation, Dr Nicolet believes this project will make a big difference for the wildlife concerned. If the loss of ponds had a negative effect on wildlife then surely the creation of clean, healthy ones will be positive.

Experts say species cannot differentiate between man-made and natural ponds, so we won't need to wait years for this project to take effect. It could be a matter of weeks.

Each stage of a pond's life is important – the habitat will naturally develop without further human interference. 'Ponds naturally fill with sediments, and their plant and animal communities will change with this process,' says Dr Nicolet. 'All stages of succession are valuable for wildlife, so as older ponds become shallower and seasonal, rather than dredging to make them deeper again, create new ponds nearby.'

Once created, following strict guidelines provided by Pond Conservation, ponds will need little or no management. 'There are exceptions to this,' she adds. 'If a pond supports rare species that need a particular set of environmental conditions... management may be required.'

Pond Conservation will be offering various levels of ground support. 'At some sites we may have no input and at others we may lead on the whole pond-creation process,' says Dr Nicolet. 'We will adapt to the need of the landowner or land manager.'

Ultimately, all new ponds will be the responsibility of the landowners or managers. Defence Estates land is already home to a number of water bodies containing a wealth of life, so is ideal for establishing new ponds. 'We have a huge number of very high-quality ponds already,' says senior environmental advisor Guy Hagg. 'Some of them are unique with regard to the flora-fauna invertebrates we've found within them.'

'Because of the nature of our training areas we don't apply huge amounts of fertiliser or use pesticides. We're often in clean catchment areas, so the water quality of our ponds is very, very high. As a result we have got a very high biodiversity within those ponds.'

He also believes the Million Ponds Project will be beneficial in the future: 'There will be a wider resource of pond habitats contributing to a wider biodiversity across the country.'

**Alex Rolandi is a freelance journalist**

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### Expect excellence

# The Vision

Media debates on what the future will be like can be enormously frustrating. Many are little more than show trials. The most outspoken, and often least helpful, pundits argue the extremes: living like cavemen or embracing a world that feels more like science fiction than fact. Either way, the sense of what we might stand to lose feels like a terrible act of surrender, underscored by the fact that so few of us are sure of what constitutes a 'good idea' for the future of mankind anyway.

Perhaps that is why, even though our very survival is in question, we tend to look at the crises that are facing us in a superficial way. Giving up the car or the supermarket or the long-haul flight becomes a sentimental journey too far.

# aries

So we think small, act small, and ultimately feel frustrated with how little power we seem to have to shape a better future.

To face the future confidently we need to think bigger and outside our usual frames of reference. We need to share our achievements and keep inspiring each other. These big thoughts aren't likely to originate with politicians, nor with businessmen. So where will these ideas – sustainable, ground-up, human, humane and, perhaps most importantly, replicable in the real world – come from?

The following pages feature profiles of people in various specialist fields who the *Ecologist* believes have a demonstrated a clear vision for a better world. Although many

of them have worked within the system for at least part of their professional lives, it is their willingness to step outside it to better view what needs to be done that links them.

Whether finance, law, waste, urban design, conservation, transport, agriculture, business, consumerism or energy, each has dared to think bigger – even though their peers haven't always thanked them for it.

They are not famous; you aren't going to see their faces on TV or on t-shirts, but for the future's sake you might want to get to know them and their ideas just the same...

Profiles by **Mark Anslow**, **Laura Sevier**, **Dan Box** and **Matilda Lee**. Main portraits by **David Partner**



## Finance

### Ann Pettifor

Ann Pettifor has changed the world once; now she wants to do it again. The driving force behind the Jubilee 2000 campaign, last year she was also a key player in the launch of the Green New Deal, a defiant public challenge to government to restructure the failing world of finance to save the environment. Early drafts of the document were written in Pettifor's London flat, and it was at her insistence that its demands were as much economical as environmental. Does that make her a pragmatist? No, Pettifor replies. She is an idealist. After all, she was born in apartheid South Africa; she knows the world can change.

Pettifor grew up 'in the shadow of a gold mine', and saw how the price of gold governed all life around her. Gold had a power, she says, sending 'very large numbers of black people burrowing down to the depths of the earth'. Later, she learned that South African gold was taken to build up the reserves Britain used to establish itself as the world's banker. Gold backed the loans Britain made to other countries to build their factories, railways and ships. This, too, was a power, she understood. This is where economics as a lever for change comes in. 'You have to be prepared to look at the world as it really is in order to change it,' she says.

This clarity of vision makes her very persuasive. In December, UN Secretary General Ban Ki-moon called for a 'Green New Deal'. In January, South Korean prime minister Han Seung-soo announced a 'Green New Deal job-creation plan'. In February, Japanese prime minister Taro Aso told his ministries to draft a 'Green New Deal' to deal with climate change and economic recession.

Pettifor's first job after moving to London in the 1960s was as a cleaner, before stints in local and national government, then the charity sector. The Jubilee 2000 campaign to cancel the \$100 billion of debt owed by the world's poorest governments grew from only a few people working in a draughty shed into a movement across 100 countries, backed by a petition with 24 million signatures and courted by Bill Clinton, the Dalai Lama and Mohammed Ali. Its success, Pettifor says, was down to two things. First, a deadline. 'That meant we had to pack all our energy into the time we had, but it was also a pressure on the creditors to do it by 2000'. Second, a huge movement of Christians, inspired by the biblical idea of jubilee – a time for universal pardon. Faith was another powerful way to make things move.

The campaign became a model for others, but Pettifor herself kept working on debt – she predicted the credit crunch back in 2003. Today, she is advising British churches on their climate change campaign, Operation Noah.



**She is an idealist. She was born in apartheid South Africa; she knows the world can change**

'People of faith think of green issues as belonging to environmentalists and not to them,' she says. 'This is about convincing the churches to lead, to say this is a spiritual cause as well as an environmental cause,' she says. Ultimately, this is about values, about asking people 'How do you value the Earth?' If you value something, you have a reason to act. Which brings us back to economics.

**Green New Deal** [www.greennewdealgroup.org](http://www.greennewdealgroup.org)

**New Economics Foundation**

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

**Ann Pettifor blogs at** [www.debtonation.org](http://www.debtonation.org)

**Advocacy International**

[www.advocacyinternational.co.uk](http://www.advocacyinternational.co.uk)

**Operation Noah** [www.operationnoah.org](http://www.operationnoah.org)

# Conservation

## Derek Gow

‘Small-scale, incredibly cautious and very slow’ is how Derek Gow sums up the Government’s approach to nature conservation. ‘The future of nature conservation is not fiddling round with tiny patches. We need to have much more imagination and we should be much more dynamic, imaginative and aggressive carrying it forward,’ he says.

Gow is inspired by large-scale rewilding projects such as the Oostvaardersplassen, a 6,000-acre wilderness in the Netherlands where nature has been given a chance to proliferate. ‘It’s incredible,’ he says. ‘There’s nothing like it in western Europe. It’s very dramatic. The Dutch argue that it’s good for nature and good for people too – they’ve totted up the true value of it.’

In the UK, by contrast, wildlife reserves ‘are isolated patches’ amid human development and agricultural land. ‘We’re very conservative here. There’s a strong agricultural lobby and nature conservation is not considered a massively significant issue. Natural England has had big budget-cuts and a freeze on funding.’

At the wilder edge of rewilding is the reintroducing of charismatic, once-extinct species such as the lynx. As much as Gow supports the idea of the reintroduction of some species, he is also a pragmatist. ‘It’s not about how far we can push it,’ he says. ‘It’s what degree of tolerance we can have. There are some things we can do and some things not. Take red squirrels, for example: they’re doomed, and it’s all but unstoppable.’

Gow is sticking with what’s realistic and possible. He’s involved in a number of water vole reintroduction projects (the water vole, once common throughout mainland Britain, has suffered a catastrophic decline over the past few decades) and is also working on the feasibility of reintroducing the European beaver into UK sites. The beaver, which hasn’t roamed Britain since it was hunted to extinction more than 400 years ago, can ‘easily be restored’. The UK has been reluctant to reintroduce beavers to the countryside, but Gow is championing them because ‘they are not an animal of the wilderness – they can live in modern, developed, farmed or urban environments’. He says there are many ecological benefits: beaver dams act as highly effective silt traps, for example, which have a positive impact on downstream water quality, and can also help reduce flooding.

Gow’s 130-acre farm in West Devon is home to the first licensed beavers in the UK – 26 of them. Seventeen are currently in quarantine, but in May they will be transported to Scotland, where beavers

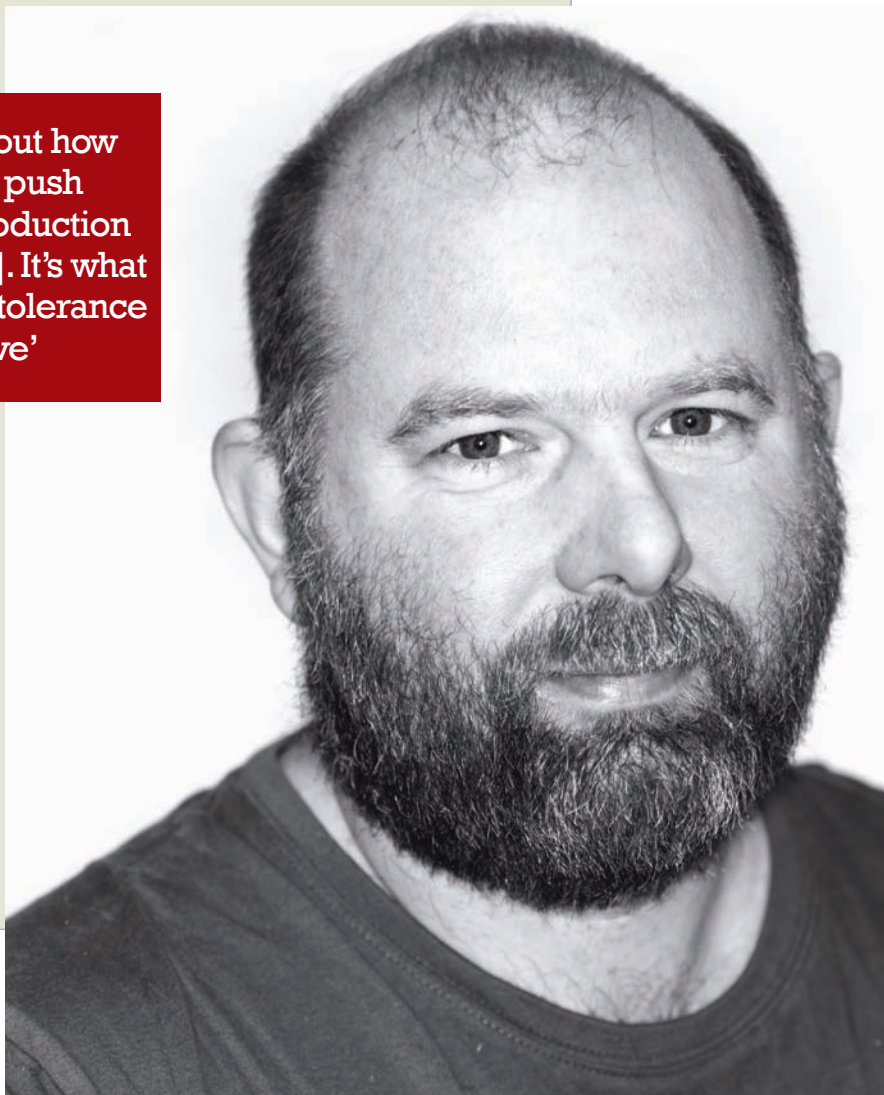
will be reintroduced to two locations (though it’s taken since 1994 to reach agreement).

The beaver project is a ‘work in progress at the moment’, but what’s unique about it is its structure. Instead of imposing a ‘top-down’ framework, it has been designed as a grassroots project that aims to get a groundswell of support. Gow believes that for nature conservation to be effective you have to work with land-based groups – farmers, hunters and anglers. ‘Landowners think conservationists have an axe to grind,’ he says. ‘We need to get them to see it as an opportunity.’ There are the financial incentives such as stewardship grants and woodland grants, and also ecotourism opportunities that can be run by the local community. ‘They can be the major stakeholders. That’s where the money will be going. This type of grassroots effort will make people value it. We’ll have them on board from the beginning.’

Whereas usually people are employed from elsewhere and the money comes from elsewhere, ‘which can create real conflict, real bitterness’, Gow believes this kind of community-led conservation puts people in charge. ‘It’s never been done before,’ he says. ‘The issue to understand is that it’s a local decision. Some people in conservation share this view. Most don’t.’

**Derek Gow Consultancy Ltd** [www.watervoles.com](http://www.watervoles.com)  
**Beavers In England** [www.beaversinengland.com](http://www.beaversinengland.com)

**‘It’s not about how far we can push [the reintroduction of species]. It’s what degree of tolerance we can have’**



## Urban design

### Carolyn Steel

In many ways, Carolyn Steel was born to be an architect: as a child she used to dream of buildings.

As her professional career advanced, however, she developed a nagging feeling that the architectural worldview was somehow incomplete.

'As a student I was always looking for something outside the realm of architecture,' Steel says. 'And later, when I was teaching, I didn't just want architects to critique my students' work; I wanted politicians, authors, scientists and sociologists.'

After 10 years teaching students at Cambridge and practising architecture in London, Steel applied for and won a scholarship to spend six months studying in Rome. Once there, she chose to focus on the city's historic Jewish ghetto, in particular what she describes as 'the mundane order of the city'.

'Do you know what "mundane" actually means?' Steel asks when we meet, bounding over to a bookcase, pulling out a tattered dictionary and leafing through it animatedly. 'Mundane: "of or pertaining to the world", "worldly", "earthly", "terrestrial", "cosmic", "ordinary", and "boring".'

She shuts the book triumphantly. 'We never contemplate the things that are directly important to us,' she explains. 'Wars and emperors are well documented, but everyday life and happiness goes under the radar. Eating, living, breathing – to me, the most interesting stuff of cities falls between the cracks of academia.'

Delving into the ordinary past of cities led Steel to the realisation that what bound together human urban experience was one totally ordinary thing: food.

'Food is everywhere and everything,' she says. 'You can't understand anything without food.'

Her discovery allowed Steel to write a book, *Hungry City*, published last year, and to coin a name for her new practice of seeing the world entirely through the lens of food: *Sitopia*, constructed from the Greek words for food (*sitos*) and place (*topos*) – her alternative to the perfect, or imaginary, city – utopia.

'We already live in Sitopia,' says Steel, 'it's just a very bad one.'

It's hard to push Steel on exactly what a good Sitopia would look like – she's adamant that it is more of an approach than a physical plan: a bottom-up, deliberative process, using food as a planning tool to decide how cities should be sustainably designed and arranged – but she does have a few thoughts.

Among her ideas are forging an indelible link between people and food at primary school age – 'get them on day one of school with a frying pan in one hand and a



carrot in the other' – as well as looking long and hard at land ownership.

France has much to teach us, Steel believes, both in terms of the laws that allow smaller retailers to operate alongside the likes of Tesco in order to help diversify food retail, and in the concept of *terroir* – growing food according to a sense of place and sustainability.

From the air, Sitopia would be a patchwork of green and grey; at ground level, food, and the social interaction it should bring, would always be visible, whether in the market or the window box. Abattoirs and agriculture would no longer be, in Steel's words, 'culturally invisible'.

She now hopes to research Sitopia further, ideally with a multidisciplinary team of academics and practitioners. She is clear, however, that Sitopia is fundamentally different to utopia. 'The beauty of Sitopia is that it is imperfect,' she insists. 'It can be anywhere. It's not Jerusalem on a hill; it's everywhere and everybody.'

*Hungry City: How food shapes our lives* (Vintage, £8.99)

**'We never contemplate the things that are directly important to us. Happiness goes under the radar'**

## Waste

### William McDonough

William McDonough, architect and designer, is one of the primary proponents of 'the next Industrial Revolution', which aims to end the entrenched wastefulness and environmental harm underpinning modern design and manufacturing.

His vision, spelled out in the book *Cradle to Cradle*, written with chemist Michael Braungart, is a manifesto for ecologically intelligent design and requires nothing less than a paradigm shift.

While many attempts at 'greening' design aim only to substitute bad chemicals with less bad chemicals and to fulfil the 'reduce, reuse, recycle' mantra, McDonough argues such concepts only perpetuate the 'cradle-to-grave' manufacturing model in which waste and pollution are considered inevitable. The 'cradle to cradle' concept questions why industry must damage the natural world at all. Why stop at cleaner indoor air quality and not aim for homes that clean the air? Why not produce chemicals that make nutrients, not waste?

'Imagine,' he writes in *Industry and Environment*, a UNEP publication, 'buildings that make oxygen, sequester carbon, fix nitrogen, distil water, provide habitat for... species, accrue solar energy as fuel, build soil, create microclimate, change with the seasons, and are beautiful.'

**'Imagine buildings that make oxygen, sequester carbon, distil water, change with the seasons, and are beautiful'**

Good design, for McDonough, anticipates design evolution. 'Designs today must anticipate change and constantly improve over time,' he says. Instead of waste, products must have 'nutrients', whether biological (t-shirts that go back to the soil) or technical (a chair that can be recycled 200 times).

In making the cradle-to-cradle vision a reality, McDonough, through his Virginia-based architectural firm William McDonough and Partners, has worked on civic, corporate, residential, cultural, institutional, academic

projects with some of the world's leading corporations and institutions.

Design firm MBDC, founded with Braungart in 1995, pioneered a certification process that validates products' quality, performance and ecological intelligence. It has brought to market certified baby products, building materials, textile products and insulation. While there have been many successes, ecologically intelligent design requires a huge shift in the way we do things, and the concept's viability – and to a certain extent McDonough's work – has attracted controversy.

Successful design, he says, is about how 'a project lives within and connects to its community and ecosystem; how it provides for the health and wellbeing of those who work or live or play there. [It is] based on natural principles: does this place seek to eliminate the concept of waste? Does it rely on renewable energy flows... celebrate diversity?'

Some 80 per cent of a product's environmental impact is decided at the design stage. The vast majority of designers and manufacturers are not held accountable for the impact of their products. In a culture that privatises profit and socialises risk, McDonough's vision could go a long way to setting this balance right.

*Cradle to Cradle: Remaking the way we make things* (Vintage, £8.99)  
[www.mbdc.com](http://www.mbdc.com)



## Transport

### Peter Lipman

Peter Lipman thought small to go large. Having built a first career as a lawyer, he joined UK sustainable transport charity Sustrans in 2001 but, by his own admission, was 'more interested in what goes on outside your own front door' than the national cycle network it was developing.

Instead, he began working on Home Zones, a Dutch-inspired plan to tear up and physically redesign suburban roads to encourage cars to slow down and more people out into the communal space between their houses. It was a great idea, Lipman thought, but too expensive, in terms of both financial cost and the energy consumed in all the building work.

'I was worried that they [the Home Zones] weren't going to be replicated,' he says. 'There are a hell of a lot of streets in Britain – I want to see all of them changed. We were trying to work out some idea where you can achieve the same, but on a viral basis.'

His answer was to scale down, and work with local communities themselves to develop low-cost ways of achieving the same goal: planting trees, altering pavements and painting roads – anything to slow down the cars.

As a result, the road is reclaimed for the local community, Lipman says, it is no longer somewhere traffic is simply passively endured. This solution was christened DIY Streets and, with funding from the Esmée Fairbairn Foundation, 11 roads across England and Wales were selected to form a pilot study.

Now, just over halfway through that study, the results can be measured in reduced pollution and increased physical activity, particularly among children, who can now play outside more safely. Anecdotally, people have also seen



more subtle changes. 'It's been good for bringing the street together,' says Lisa Grubb, a mother of two who lives in one of the 38 homes on Iden Road in Coventry says. 'I have always said hello to the woman next door, but now we talk about the street and what we want to see there.'

'Other neighbours, too, I would have just carried on walking past before, but now I'll say hello.'

Lipman hopes DIY Streets will also encourage others nationwide, which is where thinking small could mean going large. Because it's cheaper – capital costs of as much as £100,000 compared with as much as £1 million for a Home Zone – those who like what they see are more able to follow suit. This allows the idea of physically changing the road outside your home to spread, like a virus, across the country, and with it a change in the dominance of car travel on our daily lives. By empowering people to do it themselves, one measure of the scheme's success will be if Lipman, now Sustrans' policy director, and the charity he works for become irrelevant to the future success of the DIY Streets.

'One of the things I've always hoped would come out of this is that once people work together to change something in their lives... maybe they will start to think about other things,' he says. 'There's a latent power in people that we don't use and we can harness by working with each other.'

**Sustrans** [www.sustrans.org.uk](http://www.sustrans.org.uk)

**Esmée Fairbairn Foundation.**

[www.esmeefairbairn.org.uk](http://www.esmeefairbairn.org.uk)

**Peter Lipman also chairs the Transition Network**

[www.transitiontowns.org](http://www.transitiontowns.org) and the **Centre for**

**Sustainable Energy** [www.cse.org.uk](http://www.cse.org.uk)



**“The law is not a perfect tool, but it gives great scope for us to change it. Law gives you the tools to go and fight”**

## Law

### Polly Higgins

'The planet is currently enslaved to humans abusing its inherent rights – the right not to be enslaved or polluted,' says environmentalist and barrister Polly Higgins.

After years of fighting other people's battles, Higgins is taking the Earth on as a client. Last November, she presented her call for a Universal Declaration of Planetary Rights at the United Nations UK & Northern Ireland Climate Change Conference.

'I realised that it's not just about addressing the UN,' she says. 'I then had to make it happen.' So she set up the Trees Have Rights Too campaign to promote and build the cause. The campaign is gaining support 'at a political and legal level. The door is opening. It just needs to be pushed.'

'Nobody is representing the planet at the post-2012 Kyoto negotiating table. Until we uphold planetary rights we are but tweaking at the corners. Until we stop pollution at source, no amount of offsetting, carbon crediting or carbon capture and storage will solve the problem.'

It's a radical, expansive, all-encompassing vision. If implemented it would mean the end of the world's most powerful industries: oil, coal, logging and concrete.

At the moment, a corporation (an 'abstract entity') has more power and rights than the tree it fells or the air that it pollutes to make way for ever-expanding business.

'It's a mad situation,' says Higgins. 'Our laws protect these corporations at the cost of the environment. If we're serious about human survival we have to stop pollution. Voluntary codes, environmental impact reports or energy efficiency will not change these industries until the concept of "environment as property", with its limited (or in most cases nonexistent) rights, is overturned.' She knows it's very controversial but believes if after a short transition period it becomes illegal to pollute, 'watch how fast companies will move to find solutions'.

Higgins used to think the solution was technology – big, renewable technology such as CSP (concentrating solar power). For three years she was a legal advisor on international environmental and renewable energy law for DESERTEC ([www.desertec.org](http://www.desertec.org)) until she realised, 'it's a useful tool but it's not enough. What's needed is a seismic shift in consciousness to recognise our interconnectedness with nature and this planet, and the need to protect and prevent further abuse. This is the essence of Earth jurisprudence.'

She began to explore the need for a duty of care for the planet, examining various legislative avenues before coming up with the declaration. The next step is taking it to the UN General Assembly. For this she needs to secure UN representatives as sponsors – one from each continent. 'We have to run with this very fast. But I need support, wisdom, advice and finance.'

Can the law really save the planet? 'The law is not a perfect tool but it gives great scope for us to change and amend it,' she says. 'Law creates society, its framework and beliefs. At the moment you can't fight on behalf of the planet. Law gives you the tools to go and fight. I have faith in that we can use the law creatively.'

[www.treeshaveitstoo.com](http://www.treeshaveitstoo.com)

# Agriculture

## Jimmie Hepburn

“‘Visionary’ is a terrible word to use,” Jimmie Hepburn grimaces. “I’m not doing this for my own ego. I’m happy for contributions and new ideas; I’m starting from scratch here, but I want people to build upon this.”

“This” just happens to be the UK’s first organic carp farm, designed to produce a sustainable, non-carnivorous supply of fish for British tables, and makes Hepburn as pioneering in the world of food production as he is as incurably modest.

Hepburn started out in life working on an industrial salmon-farming operation in northwest Scotland. Having spent a childhood ‘messaging about in ponds’ and with a university degree in ecology, the scale of Scottish salmon farming didn’t sit easily.

“I wasn’t happy with the impact the industry was having,” he says. “Three to four tonnes of wild fish were needed to make the pelleted feed to produce one tonne of salmon.”

But Hepburn was at the same time a pragmatist, who could see that not only was salmon farming rejuvenating local economies and communities in Scotland, but also that without some form of fish farming, natural stocks would continue to decline.

“I was never scared to look at the issues,” he says. “In sustainability, you must be prepared to consider the unthinkable; you must always be prepared to consider something the complete opposite of what you have been doing.”

Which is pretty much what he did. In 2006, Hepburn moved into the muddy remains of a former fish farm in Devon, its previous tenant forced out by the dismal economics of the industry.

“A lot of people think that I’m crazy, because I’m farming a fish that isn’t even eaten in the UK,” Hepburn says. “In fact, carp is worth more if it’s sold as a sport fish for anglers than if it’s sold for the table.”

His choice of carp was far more considered than his critics believed, however. For a start, carp will eat just about anything – ‘they’re the chickens of the fish world’ – and this means feed can be sourced locally without relying on dwindling Atlantic stocks. They don’t need super-clean water (unlike salmon), they don’t produce much pollution and they don’t need as much food.

On Hepburn’s farm, feeding time involves shovelling manure from local organic farms into the ponds, which fertilises plants and algae, providing natural food for the carp. This is supplemented with organic grain and topped up with mealworms bred using wheat bran and the scraps from a local veg-box scheme.

“You get to farm the whole system,” Hepburn explains. “This is the revolution that is needed in aquaculture.”

But his vision extends far beyond the confines of his own patch. Part of Hepburn’s business is a consultancy on ponds, lakes and sustainable aquaculture – Aquavision – which encourages ordinary people to raise fish as food in



their back gardens or garages, using ponds or tanks.

“Why shouldn’t people look at growing fish, just as they do vegetables?” he asks. “I would like people in the middle of London to say, ‘Why couldn’t we do that?’ If I can get people to start farming fish they’ll also start becoming more connected to where their food is coming from.”

Hepburn is quick to praise Penny, his organic horticulturalist wife, for her role in helping him run the business, but it’s clear that his vision has been expensive:

“I’ve always seen this as a place to inspire,” he says. “It’s a fantastic opportunity, but it’s also a hell of a risk. I feel like I’m at the helm of a 747 taking off: I can see the end of the runway, but the wheels haven’t yet left the ground.”

[www.aquavisiononline.com](http://www.aquavisiononline.com)

**‘You get to farm the whole system. This is the revolution that is needed in aquaculture’**

## Business

### Bill Drayton

Bill Drayton is a slight, eager man who straddles worlds. He knows his stuff, having graduated from Harvard, Oxford and Yale, and has a theory of everything. Or at least what counts. It goes as follows: the Industrial Revolution divided the western world in two. Industry leaped ahead, driven by the culture of competition written into its capitalist DNA and the new-found power of the furnaces themselves. Left in the starting blocks, society taxed the new wealth created by business to pay for its roads, hospitals and schools. Because the money was drip-fed in, the social sector had little need for competition and instead allowed itself to become sedate.

There were exceptions. In the late 19th century emerged a number of what Drayton calls social entrepreneurs, individuals who harnessed the self-starting, competitive charge of businessmen to do good. He suggests Florence Nightingale. Robert Owen, founder of the co-operative movement, is another. But they were few and far between.



Drayton decided to change this, and his inspiration was those most fiercely driven beasts of the 1980s corporate world: venture capitalists, Masters of the Universe who would pour money into a small company with big ideas and help it grow in order to reap a profit.

In 1980 Drayton founded Ashoka, named after a third-century Indian leader. With a \$50,000 budget, it used the methods of venture capitalism to find, select and invest in social entrepreneurs doing work in schools, medicine or literacy. It was about bringing two worlds together; looking with a businessman's eyes for investment opportunities, but measuring the success of that investment not in dollars but social return. Today, Ashoka has an annual revenue of approximately \$30 million, 160 staff in 25 regional offices across five continents, and supports 2,000 entrepreneurs.

Among them is Muhammad Yunus, the Bangladeshi banker and economist who developed the concept of microcredit – very small loans given to the very poor. Yunus became an Ashoka 'fellow' in 2001. In 2006 he won a Nobel Prize.

By helping others to help, Drayton's work has a multiplier effect: 'An entrepreneur ploughs the field and it weakens the

PHOTOGRAPH OF BILL DRAYTON BY YUSUKE ABE



**'We create change not by telling people what to do, but by helping them tell their peers what they have done'**

house that was sagging under the weight of decades of dodgy DIY work. Having dedicated his professional life to combating climate change, Marshall decided his house should become an extension of that aim. After all, he could hardly make it worse.

What surprised him was that this first step led to a dead end. He could find hardly any information on environmentally friendly renovation, and what he did find was too hippy, too technical or assumed he was building from scratch. Without a guide, Marshall and his wife Annie became pioneers, pulling together what advice they could and making the rest up as they went along. In case anyone wanted to follow, Marshall began putting what they had learned up on a website.

'I thought I could write a book about it that no-one reads, or I could write a book that I then spent the next five years trying to publish,' he says. 'Or I could just stick it up on the internet. The magic of the internet is that you get results.'

Today that website – [theyellowhouse.org.uk](http://theyellowhouse.org.uk) – has had about 650,000 visitors and provides a wealth of tips, technical reports and links to architects and material suppliers. As it developed, Marshall found himself fascinated not just by the information, but the nature of the medium itself.

'The internet lends itself very well to what I call peer-to-peer communication,' he says. 'The most powerful and inspiring form of communication there is is someone just like you.'

This inspired step two: bringing people together to teach each other what they have learned from

## Energy

### George Marshall

George Marshall didn't feel like a visionary at the time. His was an idea born of frustration, and he had no idea where it would lead him.

In 2000, Marshall, an environmental campaigner, moved to Oxford and into a small 1930s ex-council

idea that change isn't possible,' he says. 'He seeds with some user-friendly idea. The next entrepreneur comes and there is more ploughing, more seeding. Then hundreds.' Ashoka teaches other lessons from the corporate world, providing funding and a network so fellows who would otherwise work alone and in often hostile circumstances have access to support, ideas and protection. It offers access to experts in marketing and accounts. Managers at its Virginia HQ join the dots, applying solutions that work in one place to another, linking organisations to amplify impact, making them global. Drayton's social workers are not saints or socialists; they wear sharp suits, and they work hard.

His approach has influenced others, including the Skoll Foundation, established by eBay billionaire Jeff Skoll. Drayton believes we are now on the verge of another revolution, which will end the divide between the business and social worlds. 'It's a no-brainer,' he says. Their division was a 'nonsensical historical accident' in the first place, and their reintegration is 'profoundly important for the health of both'.

**Ashoka** [www.ashoka.org](http://www.ashoka.org)

**Grameen Bank** [www.grameen-info.org](http://www.grameen-info.org)

**Skoll Foundation** [www.skollfoundation.org](http://www.skollfoundation.org)

**Skoll World Forum** [www.skollworldforum.com](http://www.skollworldforum.com)

similar eco-renovations. One weekend last September, 18 eco homes in Oxford threw open their doors to more than 1,700 people. Marshall's home had 150 visitors in one day. That's a lot for a small English terrace. A separate website has also been set up where people can read case studies from others who have 'ecovated' their homes and can tell them what works, and what does not.

'The idea behind the project was that we can create change most effectively not by telling people what to do, but by helping people tell their peers what they have done,' says Marshall.

And this change is vital. A 2007 report from the University of Oxford's Environmental Change Institute noted, 'the household sector represents 27 per cent of our total emissions and achieving deep cuts here is an imperative'. While existing legislation governs emissions from newly built houses, four in five of the homes we will inhabit in 2050 are already standing and, as the report says, cutting emissions from these 'will require a quantum leap in commitment from government'. Only in recent months has Whitehall begun to grasp this nettle.

For Marshall, step three means expanding nationwide. This year a series of open weekends will be held across the country, with the ultimate aim of establishing a single national eco-home open day. Building an eco home then has a multiplier effect, he says: as well as the carbon emissions you save yourself, you can inspire others to do the same.

**The Yellow House** [www.theyellowhouse.org.uk](http://www.theyellowhouse.org.uk)

**Ecovation** [www.ecovation.org.uk](http://www.ecovation.org.uk)

**George Marshall also founded the Climate Outreach**

**and Information Network (COIN)** [www.coinet.org.uk](http://www.coinet.org.uk)

**George Marshall blogs at** [www.climatedenial.org](http://www.climatedenial.org)

## Consumerism

### Duane Elgin

Duane Elgin is a self-described 'evolutionary activist' who, since the 1960s, has explored the practical and philosophical meaning of simplicity. The publication of his 1981 book *Voluntary Simplicity* launched a movement of the same name. The idea for it came to him during protests against the Vietnam War, when people were looking for alternatives to military and industrial power and the lifestyles that led to war, and has been reinforced in the 1980s and 1990s as people universally came to be considered 'consumers'.

'Voluntary simplicity' is the answer to a challenge facing humanity after 200 years of material growth: 'If the material consumption of a fraction of humanity is already harming the planet, is there 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?'

In the rush to shop our way to a better life, he suggests that 'what was once viewed as a turn away from progress, voluntary simplicity – consciously chosen, deliberate and intentional – supports a higher quality of life'.

In part, his writing and advocacy is a simple but essential reframing of the commonly held perception that living simply is sacrifice. Instead, he writes, 'Sacrifice is the modern-day consumer lifestyle, overstressed, overbusy and overworked... is hiding nature's beauty behind a jumble of billboard advertisements... is carrying more than 200 toxic chemicals in our bodies with consequences that will cascade for generations ahead.' Simplicity, on the other hand, 'cuts through needless busyness, clutter and complexity... reveals the beauty and intelligence of nature's designs... enhances living with balance – inner and outer, work and family, family and community'.

'There is a deep simplicity and there is a cosmetic simplicity. In the deep sense, it explains what we are doing here; it is a rational response to living in a living universe,' he says. His new book, *Living Universe*, is published on Earth Day (22 April) and has been 27 years in the making. A key theme is that 'consumerism is a rational response to living in a dead universe, whereas simplicity is a rational response to living in a living universe. As science and spiritual traditions converge around a paradigm of aliveness, it "organically" transforms our approach to consumption and living'.

Part of the beauty of 'voluntary simplicity' is that its specifics are not dogma. 'People tend to start from a place of guilt, and another extreme is to get rid of it all,' Elgin says. 'We just need to get into balance. It is very individual – there is no "cookbook" with easy recipes for the simple life. Simplicity helps you find aliveness in relationships, in the meaningful work you do and in the community... whereas consumerism says "how big is my pile of stuff?"'

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

**'Simplicity cuts through needless busyness, clutter and complexity. It enhances living with balance'**



**MRSA IN PIGS**

**I**t is a landscape of clinical efficiency. Flat, square fields, neatly interspersed with row upon row of anonymous factory units, greet the passerby. Behind the silent facades, every building contains thousands of farm animals. It could be veal calves, turkeys or chickens, but in this region of the Netherlands, close to Eindhoven, it is predominantly pigs. The Netherlands has a higher concentration of farm animals per square kilometre than any country on the planet, and these farms are now at the frontline of a new battle against MRSA.

It has plagued hospital wards in Britain for years, picking off the elderly and infirm, but now another strain of MRSA is emerging from the factory farms of Northern Europe, and it is linked to the insatiable demand for cheap meat on our plates. The *Ecologist* Film Unit travelled to the Netherlands to investigate.

'Community-acquired' or 'farm animal' MRSA has a grim track record. Commonly causing skin infections, this strain of bacteria can also cause pneumonia, bone infections and endocarditis. And in the Netherlands it is spreading. 'What we have seen here in our region is a rise of MRSA-positive patients, from an average of 40 or 50 MRSA-positive patients in this entire region in a year to last year 224, and about 60 per cent of those are animal-related MRSA,' says Mireille Wulf, a microbiologist based in Eindhoven.

Recent studies have shown that between 30 and 50 per cent of all pig farmers in the Netherlands carry the bacteria. This growing trend has so worried the health authorities that they have brought in legislation to stem it: all pig farmers entering a Dutch hospital must now go into quarantine upon admission.

And it's not just the hospitals that are concerned. Willie Buysse is a vet who works on pig farms in the south of the Netherlands. 'If I have to go to hospital I would like to be helped,' he says. 'If they refuse me, I have a problem. And one can infect other people and animals, so it is something to worry about.'

The common factor in all this is antibiotics, says Dik Mevius, a professor of microbial resistance at the university of Wageningen, who is studying the recent upsurge in MRSA outbreaks. 'The typical feature of the animal-derived MRSA that is spreading in animals right now is that it is always tetracycline resistant. Tetracyclines are the most used antibiotics, so its quite likely that the use of tetracyclines is one of the reasons that these MRSA's are commonly present,' he says.

Campaigners opposed to factory farms point to the brutal and confined conditions on pig farms – such as the controversial use of restraining stalls for sows – that necessitate the use of antibiotics in the first place.

'They [the animals] are so stressed and



**ECOLOGIST**  
FILM UNIT

# Sick as a Pig

Pictured: the healthiest pig is a free-range pig  
Top right: testing for MRSA at Maxima Medisch Centrum, Eindhoven

Below right: sows are kept in restraining stalls  
Bottom: a dead piglet outside a factory farm in Someren-Heide, Brabant



It has plagued hospital wards in Britain for years, picking off the elderly and infirm, but now another strain of MRSA is emerging from the factory farms of Northern Europe, and it is linked to the insatiable demand for cheap meat on our plates. The *Ecologist* Film Unit travelled to the Netherlands to investigate. Report by **Jim Wickens**

MRSA IN PIGS

**Right: Willie Buysee is a vet who works on pig farms. He has concerns about getting MRSA**

**Below: pig farmer Rini van den Hengel with his antibiotic gun**

**Bottom: Uden-based organic farmer Hans Donkers with healthy, happy pigs, Eindhoven**

**Opposite page: the intensive farming of pigs facilitates the spread of MRSA**



bored that they get sick, their physical health is suffering from their living conditions and the only solution that farmers see is to give them antibiotics instead of changing those living conditions,' says Natasja Oerlemans, a representative of the Animal Party in the Dutch parliament. 'So you see a tendency in the Netherlands that the farms get more intensive, they get larger; that a farmer has less time to spend with individual animals and they use antibiotics as a treatment for animals to prevent them from getting sick.'

Oerlemans claims industry and government alike have played down this link between inhumane living conditions, animal sickness and the preventative use of antibiotics. 'From our experience, the ministry of agriculture is acting more like a marketing manager of the meat industry,' she says, 'and that's what worries us more and more. This enlargement and intensification of farms is causing a great risk. It's a time-bomb for citizens.'

The Dutch pig industry has a lot to lose. More than one million tonnes of cheap pork is exported from the Netherlands every year, worth in excess of €2 billion to the rural economy. According to the latest report from the British Pig Executive, cuts of meat from 90 per cent of the pigs slaughtered in the Netherlands will end up on British plates, accounting for 12 per cent of the total pork consumed in the UK each year.

The key factor that makes Dutch pork so attractive is the low price, a product of large industrial farms that utilise modern methods of husbandry to minimise overheads and maximise output. These economies of scale also create ideal conditions for the potentially rapid spread of disease, however; illnesses, the pig industry argues, that would be impossible to treat without the regular use of antibiotics.

Henk Boelrijk, a representative of the Dutch pig association is unapologetic: 'In general the health situation on Dutch pig farms is good. If bacterial diseases occur, antibiotics are needed to cure them as fast as possible. With diseased pigs you need many kilos of antibiotics. Pig farmers and the public do get frightened; many animals means using a lot of medicine.'

Quite how much is another matter. The *Ecologist* discovered that sows in the Netherlands are given antibiotics an average of 22 times per year, and nationwide the entire livestock industry consumes in excess of half a million kilograms of antibiotics every year. This is between four to six times the dosage of antibiotics that Dutch people typically receive.

It is a situation that frustrates the Soil Association. 'It is simply not acceptable to allow methods of food production that take away one of the biggest advances in medical science ever, and that's our ability to treat serious infections in the human population,' says Richard Young, a Soil Association

**'It remains to be seen whether farm-animal-acquired strains of MRSA will soon be affecting people in the UK'**

advisor and farmer, based near Bristol.

It remains to be seen whether the spectre of farm-animal-acquired strains of MRSA will soon be infecting people in the UK on the scale seen in the Netherlands. Last year three people in a Glasgow hospital were found to be infected with MRSA ST398, one of the same strains of MRSA spreading from pig farms in the Netherlands. In this instance, it was impossible to trace the source of the infection.

The Soil Association claims, however, that under NHS operating procedures, tests to identify farm-animal strains of 'community-acquired' MRSA are not routinely carried out in hospitals unless patients contract blood infections; so it is possible that outbreaks of community-acquired MRSA across the country may not be recorded at all.

'The Government is really not taking this problem seriously enough. We need urgent testing done to see how big this problem may already be in the UK,' says Young.

In the Netherlands, Uden-based pig farmer Hans Donkers has seen both sides of the debate. He lost his herd to swine fever in the 1990s. Instead of replacing them, he switched farming techniques from a conventional intensive system to an organic one. When the *Ecologist* visited, he was quietly watching his sows as they explored the field by his house,



## Now watch the film...

Get a behind-the-scenes look at life on an industrial pig farm. To watch our special report from the Netherlands, examining the unreported risks to our health caused by intensive farming, log on to [www.theecologist.org/ETV](http://www.theecologist.org/ETV)



lazed on the grass, dug holes and evaded the occasional approaches of the resident boar.

'I think that the pigs are healthier in the organic pig farming because they can explore their own natural behaviour,' he says. 'The pigs have more natural resistance. What I do differently to before is to separate a [sick] pig so he can rest and recover better, and what I also do is use herbs to treat a pig. Before I used antibiotics. The pigs are healthier, they have less stress and also the bill of the vet is very little. It's a very nice way of keeping pigs.'

**Jim Wickens is a journalist and producer with investigative agency Ecostorm ([www.eco-storm.com](http://www.eco-storm.com))**

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Anon visitor

# PLOUGHS INTO SWORDS

The uniting of 800 million rural workers against the loss of their traditional way of life gives lie to globalisation's claims to beneficence. Resistance is far from futile, says **Ed Hamer**

**T**he word 'peasant' doesn't immediately conjure up images of romantic revolution. To be honest, it doesn't even come close. In this country the term is more closely associated with the muddled underclasses toiling the fields of medieval Europe than with any memories of our own 14th-century pitchfork rebellion.

Fortunately, vernacular is only cultural, and so too are stereotypes. While the enduring image of revolting peasants is now all but lost from our own countryside, theirs is a struggle still embodied by a staggering majority of the world's rural poor. It seems appropriate, then, that La Via Campesina ('The Peasant Way') should be the title claimed by an unprecedented grassroots movement emerging from the fields, paddies and plantations of the global south to reclaim not only its rightful name, but also its right to exist.

Via Campesina is a rapidly growing mobilisation of small and medium-scale farmers, landless workers, indigenous peoples and rural youth drawn from more than 60 countries on five continents. While collectively the movement represents a diversity of campaigns, ranging from deep ecology to micro-finance and Fairtrade, it is passionately united in a single struggle: for the right of peasant farmers everywhere in the world to resist the globalisation of their way of life.

Launched in 1993, it has remained relatively unknown to western observers, spending much of the past 15 years mobilising its membership, an estimated 800 million rural workers worldwide. Following the 2008 global food crisis, however, Via Campesina has justifiably emerged as one of the most

progressive and authoritative voices on solutions to the crisis.

The Via Campesina story is really a story of the 21st-century peasantry. The image of the traditional country farmhand concerned only with his single acre and his cow is now largely redundant in a world where the poorest two-thirds of humanity feed the richest third. Today's peasant has instead seen his livelihood increasingly subjected to a series of shocks and stresses over which he has little or no control.

Taranjit Kaur, a middle-aged peasant farmer from the central Indian state of Vidarbha, has been farming all his life; it is the only profession he knows. We met last October at Via Campesina's fifth international conference, held in Mozambique. When I ask what has brought him, at considerable expense, from his rural home in India to an ex-colonial capital more than 5,000 miles away, his reply is direct and uncompromising: 'Resistance'.

The region Taranjit farms is recognised as one of India's most impoverished. Home to more than 300,000 chronically malnourished individuals, Vidarbha is also attributed with the highest rates of farmer suicides in the world, currently estimated at eight per day. 'It hasn't always been this way,' Taranjit explains to me with a determined fluency. 'Our farmers have lived through three generations in the past half-century alone: industrialisation,

liberalisation and now the age of globalisation.'

Until recently Taranjit farmed cotton on the small six-acre farm his father had been proud to pass on to him more than 30 years ago, a commercial cotton plantation painstakingly converted from a mixed farm during the golden years of the Green Revolution.

## The thin end of the wedge

Promoted as the magic-bullet that would fast-track India's transition from an agrarian to an industrial economy, the Green Revolution was in reality introduced to India in 1965 on the back of one of the worst droughts in living memory. Having recently invested heavily in its fledgling manufacturing industry, India was in no position to refuse the conditions imposed on the food aid it desperately needed to avert famine. In return for importing five million tonnes of wheat and three million tonnes of maize, the US demanded that India expose its farmers to direct marketing and trials of fertilisers, pesticides and high-yielding seed varieties (HYVs) by US agribusiness.

'Understandably,' Taranjit tells me, 'my father's generation could not refuse magic seeds and chemicals that promised not only better farming, but an income that would pay for education for their children, healthcare and a better standard of living for their families.' In addition, US conditionalities

**'Via Campesina fights for the right of peasant farmers everywhere to resist the globalisation of their way of life'**



**Pictured: La Via Campesina activists work a demonstration plot at the Bali climate change conference in 2007**

**Below: A demonstration against subsidised rice imports, Jakarta, 2006**

extended to include control over domestic agriculture policy, guaranteed crop prices to stimulate supply and subsidising the cost of fertilisers to stimulate demand.

By 1978, HYVs accounted for more than 70 per cent of India's wheat crop, 35 per cent of rice, and 20 per cent of millet and corn crops respectively. An enthusiastic uptake of free fertiliser trials temporarily boosted yields by an average of 30 per cent, resulting in a record grain output of 131 million tonnes in 1979.

In much the same way as the British had prolonged colonialism in the 19th century by offering free tea bushes to India's small farmers, US agribusiness had taken less than a decade to foster a dependence on its products in some of the most vulnerable producers on the planet. By the time Taranjit inherited the farm from his father, his family was already in debt to local moneylenders for the fertilisers needed to grow the high-yielding cotton.

All too soon, Taranjit's country was forced to surrender to a new wave of intervention. As India sought financial support in its drive for modernisation during the 1980s, it inevitably turned to the International Monetary Fund and the World Bank, for balance of payment support and public sector investment. What it received was a series of Structural Adjustment



PHOTOGRAPHS: LA VIA CAMPESINA ARCHIVES

Programmes (SAPs), whereby financial support was only offered in return for a commitment to neo-liberal reforms of its agriculture sector.

As Taranjit explains, 'There was never any question over the transparency of SAPs. The US and EU provide the greatest funding for these institutions, so the SAPs were naturally designed to open foreign markets for their companies and corporations.' Throughout the late 1970s and early 1980s India's farmers looked on helplessly as control over their country's seed suppliers, grain stores, processors and marketing boards fell into the hands of foreign-owned private companies.

The scene was then set in 1994 when the newly established World Trade Organization approached shining India with the promise of free-market growth. It was, says Taranjit, the final nail in the coffin: 'When we joined the WTO we automatically lost any remaining right we had over what we grew and how we farmed it. In Vidarbha, everyone had become dependent on cotton as a cash crop.'

In 1994, 1lb of cotton cost \$1.10 on the international market. Within two years, the WTO's Agreement on Agriculture had forced the Indian government to remove subsidies for cotton producers and open its domestic market to subsidised imports from the southern US. By 1997, the cost of 1lb of cotton had fallen to \$0.40 on the international market, the net result being that a fertile and prosperous agrarian country, once the cotton cradle of the east, had become the third largest cotton importer in the world.

## Galvanising support

Taranjit's story is by no means exceptional; it is one repeated throughout countless rural communities from Latin America to Africa and Southeast Asia. Although it is a story of despair, however, it is also one of hope. In the process of claiming lives and livelihoods, globalisation has inadvertently galvanised support for what is now arguably emerging as the largest social movement of our time.

In April 2008, the long-awaited UN- and World Bank-sponsored IAASTD report on the current state of agricultural development was released, to international acclaim. A three-year comprehensive evaluation of more than 110 countries by more than 400 independent scientists, the IAASTD report was welcomed by many NGOs as a milestone in recognising the failings of more than three decades of misguided international development.

Set against the backdrop of a mounting global food crisis, the IAASTD report called for an immediate move away from chemically intensive industrial agriculture towards localised agro-ecological solutions, the protection of rural livelihoods and natural resources, and a rejection of genetic engineering as a wholesale technological

## La Via Campesina's seven principles of 'food sovereignty'

**1 FOOD** A basic human right: access to sufficient, safe, nutritious and culturally appropriate food should be enshrined as a constitutional right achieved by prioritising national primary agricultural sectors.

**2 AGRARIAN REFORM** Genuine agrarian reform is required to give landless and farming communities – especially women – ownership and control of the land they work. Indigenous territories must be returned to indigenous peoples and land must be free of discrimination on the basis of gender, religion, race, social class or ideology. The land belongs to those who work it.

**3 PROTECTING NATURAL RESOURCES** Food sovereignty demands the sustainable use of natural resources: land, water, seeds and livestock breeds. Those who work the land must have the right to practise sustainable management of natural resources and to conserve biodiversity free of restrictive intellectual property rights.

**4 REORGANISING FOOD TRADE** Food must be recognised first and foremost as a source of nutrition, and only

secondly as an item of trade. National agricultural policies must prioritise production for domestic consumption and food self-sufficiency. Food imports must not displace local production nor depress prices.

**5 ENDING THE GLOBALISATION OF HUNGER** Food sovereignty is directly undermined by the growing control of multinational corporations and multilateral organisations such as the WTO, World Bank and the IMF over agricultural policies. Regulation and taxation of speculative capital and a strictly enforced code of conduct for TNCs is urgently needed.

**6 SOCIAL PEACE** Food must not be used as a weapon. The ongoing displacement, forced urbanisation, repression and increasing incidence of racism towards smallholder farmers cannot be tolerated.

**7 DEMOCRATIC CONTROL** Smallholder farmers must have direct input into formulating agricultural policies at all levels. Rural women, in particular, must be granted direct and active decision-making rights on food and rural issues.

solution to the feeding the world. Predictably, the only countries that refused to endorse the report were the US, Canada and Australia.

As well as promoting the role of sustainable agricultural science and appropriate technology, IAASTD emphasised that local and traditional agricultural knowledge was key in developing solutions. Unsurprisingly, Via Campesina, born out of the very communities appraised by the report, anticipated these findings by more than a decade.

Honduran peasant leader Rafael Alegría, Via Campesina's international co-ordinator for more than 10 years, sees the IAASTD report as international recognition of the movement's longstanding ideology. 'Even institutions such as the World Bank, the IMF and the FAO [UN Food and Agriculture Organization] have recognised that this neo-liberal model of world development has been a failure. It has generated more problems than solutions. Their own experts have confirmed what we have suspected all along – that we, the small farmers of the world, are not the cause but the solution to the food crises.'

'When we first mobilised in the early 1990s, we vocalised the millions saying "no" into a single voice saying "yes" to peasant struggle. Our network has shared experiences from around the world to build a vision for agricultural development based on local knowledge, ecology and respect for our way of life.'

Indeed, drawing from shared experiences has been central to Via Campesina's strategy in building resistance from the ground up. From the impacts of the 1994 North American Free Trade Agreement on Mexico's peasantry,

which taught the need to prioritise national food economies, to the land occupations and agrarian reform shown by Brazil's 1.5-million-strong Landless Peasant Movement, for an organisation supported by limited funding from western NGOs, it has been astonishingly effective at co-ordinating its global struggle at local, regional and national levels.

Key to the movement's success at the grassroots has been the revolutionary *Campesino a Campesino* ('Farmer to Farmer') model of agricultural development. Pioneered in Central America in the 1980s, the scheme initially focused on promoting agro-ecological skills between farmers from one region or country and another. By sharing local knowledge in this way, *Campesino a Campesino* immediately overcomes many of the limitations and suspicions encountered by traditional top-down development initiatives.

The model has since been adopted by Via Campesina as a way of rapidly sharing not only farming skills, but also analysis and understanding of developments in national and international agricultural policies. When South Korea was forced to open its borders to cheap rice imports in 2004, for example, it was the country's farmer-to-farmer network that distributed pamphlets outlining the impacts of the trade policy directly to the farmers working in the paddy fields.

At the national and regional levels, member organisations co-ordinate demonstrations and practical actions, on an almost weekly basis, in response to the most pressing issues affecting their members. International and regional conferences are held every four





**Pictured: La Via Campesina sends a clear message to world leaders at the 2007 climate change conference, held in Bali**

**Below: Delegates take part in workshops at the 2007 Nyéléni Forum on Food Sovereignty, in Mali**



established in the developing countries from which it draws its core membership, small family farmers throughout both Europe and the US have understandably found solidarity in their cause. It was, after all, the architecture of the EU Common Agricultural Policy (CAP) and the US Farm bill, which provided the model of agricultural industrialisation that was exported to the global south.

Paul Nicholson represents EHNE, a small farmers' union from the Basque country and one of 24 official Via Campesina member organisations active within Europe. Although social security measures have traditionally buffered European farmers from the impacts of a globalising marketplace, he believes Via Campesina's struggle is becoming increasingly relevant to Europe's remaining peasantry.

'Although small farmers no longer represent the majority here in Europe as they do in Latin America, Africa and Asia, we remain resilient in the face of the current crisis,' he says. 'It is essential we share our struggles and experiences of the CAP with southern producers, policymakers and governments, to demonstrate that the globalised western model of agriculture does not and will not work for the benefit of the majority.'

'I would like to see an agriculture based on local needs, on local production adapted to local food-producing conditions. Europe is a diverse continent, and I think we have the climate, the farmers, the knowledge and the capacity of feeding ourselves in a way that is environmentally and socially responsible.'

Importantly it isn't just experience and ideology that can be shared, but the tactics required to achieve change. Via Campesina's southern allies are passionately empowered by their struggle, largely because it is the only livelihood they know. There is a world where political regimes and governments have been toppled at the will of the people. Such an environment breeds a strong sense of optimism and experience in how the majority can overturn the policies made by the few.

Europe can learn much from their struggle. As Rafael Alegría says, 'We are now facing a new historical moment, different in any way from what has come before. The issues we represent are not just important for peasants but for humanity as a whole. What first began as a grassroots struggle for peasant rights has evolved to carry the food sovereignty of the world on its shoulders. They embrace globalisation; we embrace the globalisation of La Via Campesina. Globalise the struggle. Globalise hope!'

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

**Ed Hamer is UK programmes co-ordinator for the International Society for Ecology & Culture (ISEC)**

years, while a central co-ordinating committee liaises between the regions and maintains the organisation's website as a central resource for campaign literature, videos and press releases.

## Globalise the struggle

In recent years, international campaigns have largely polarised around the issue of 'food sovereignty', a term coined in the mid-90s to describe Via Campesina's founding principle: the fundamental right of agricultural communities to define their own food, livestock and fisheries systems.

'Food sovereignty' explains Peter Rosset of the California-based Food First Institute, 'goes far beyond what we associate with the term "food security", the certainty of having

enough food to eat each day. Feeding a nation's people is an issue of national security – of sovereignty. If the people of a country must depend for their next meal on the vagaries of the global economy, on the goodwill of a superpower not to use food as a weapon, or on the unpredictability and high cost of long-distance shipping, that country is not secure in the sense of either national or food security.'

The food sovereignty concept was debated at a specially convened conference in Sélingué, Mali, in February 2007. The resulting Nyéléni Declaration outlines the seven principles that must be respected if food sovereignty is to be achieved (see box, left). In 2007, Via Campesina called on the UN to enshrine food sovereignty in the Universal Declaration of Human Rights.

Although Via Campesina has its roots firmly

**WILDLIFE: FEELING THE HEAT**

**I**f you are like me, global warming usually conjures up thoughts of melting glaciers and stressed-out polar bears. But the polar and boreal regions, while spectacular in many ways, are relatively poor in biodiversity. Species in chilly climes are in serious trouble, but they are vastly outnumbered by a biota that may be even more vulnerable to global warming – the myriad denizens of lush rainforests.

We all know that tropical rainforests are the Earth's richest ecosystems biologically; and, with an expanse of forest the size of 50 football fields going up in smoke every minute, that rainforests and their wildlife are unquestionably imperilled by habitat destruction. But how could global warming jeopardise animals and plants that are already adapted for warm, sultry conditions?

In a big way, evidently. Tropical species differ from their boreal and temperate-zone counterparts in one key respect: most are thermal specialists. Rather than enduring a huge contrast between freezing winters and warm summers each year, as their northern counterparts do, tropical species live in hot or balmy weather year-round.

University of Pennsylvania biologist Daniel Janzen grasped this years ago when he pondered the profound way that mountains seem to create barriers for warm-adapted lowland species. In the tropics, he realised, most species are specialised for a narrow range of elevations; lowland species rarely ascend mountains because temperatures there drop by about 1°C for every 100m increase in altitude. For thermal specialists, this cooling effect is so powerful that even a modest 500m hillock can halt many lowland species in their tracks.

Just as importantly, mountain-dwelling species in the tropics often find the sweltering lowlands an insurmountable obstruction. Specialised for relatively cool, cloudy conditions, their montane populations become isolated from other such populations,

halting gene flow and allowing them to evolve and diversify in situ – much as Darwin's finches did on the Galapagos Islands, generating a kaleidoscope of biodiversity. In the tropics, each mountain or mountain chain tends to spawn its own set of unique species. Hence, tropical mountains are often hotspots of biodiversity, teeming with locally endemic species found nowhere else.

Some scientists now assert that tropical montane endemics are among the most imperilled species on Earth. 'As the world gets hotter, these creatures have nowhere to go,' says Stephen Williams, an ecologist with James Cook University in northern Queensland, Australia. 'Their populations will wither and collapse until eventually they just disappear into heaven.'

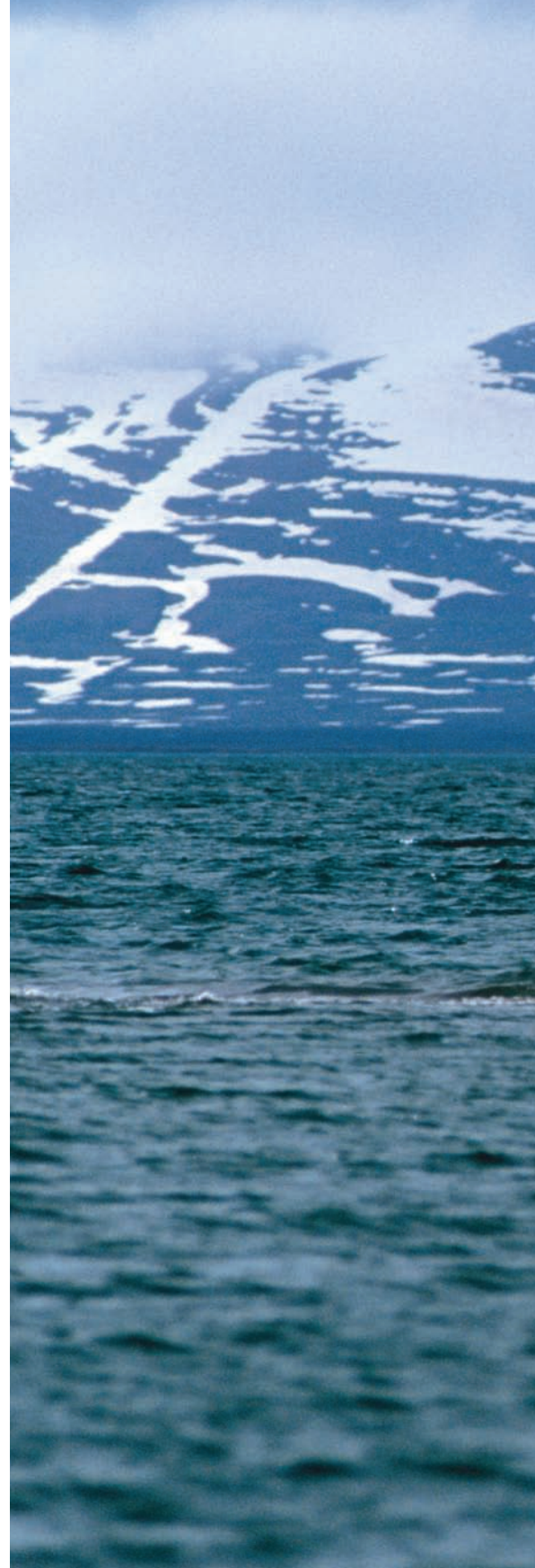
**Possum predicament**

Williams knows of what he speaks. Using mathematical models and some of the best available datasets on tropical climates and biogeography, he has projected the responses to global warming of every endemic mammal, bird, frog and reptile species in the rainforests of north Queensland. His conclusions are jolting: if average temperatures rise by more than 2°C – which could easily happen this century, according to the Intergovernmental Panel on Climate Change – Williams' models suggest extinctions will spike dramatically in north Queensland. 'Basically,' he says, 'the high-elevation fauna could be stuffed.'

By Williams' reckoning, the poster-child for global warming should be not the splendid polar bear or threatened caribou, but the white lemuroid possum (*Hemibelideus lemuroides*). This strikingly attractive animal, restricted to cool, misty rainforest above 1,100m elevation on Mount Lewis in north Queensland, hasn't been seen by anyone in three years (belatedly, I spent a long night in 2008 searching for it myself). According to Williams, its death-knell may have been a heat wave that hit the region in late 2005, when drought-stressed trees began shedding

**With global warming putting pressure on animals and biodiversity in the tropics, is it time we had a new poster child for climate change, asks William Laurance**

**POSSUM OR**



PHOTOGRAPH: LOUISE MURRAY/SCIENCE PHOTO LIBRARY



# POLAR BEAR?

their leaves and dead possums of several species were found along forest roads.

Another scientist who sees the heat wave as a likely culprit is Andrew Krockenberger, who studies possum physiology at James Cook University. 'Highland possums never drink – they get all their water from the leaves they eat – and if temperatures rise the only way they can cool themselves is by panting,' he says. 'This leads to a lot of evaporative water-loss.' If it gets too hot, Krockenberger believes, the possums die of dehydration.

Indeed, the heat wave might have been a double whammy. As temperatures climb, the cloud base that often surrounds tropical mountains rises higher or vanishes altogether. The clouds are vital: they keep the mountain cool and provide moisture for its dripping forests, which actually strip water droplets from the cloud mist. Hence, spiking temperatures increase water demands for wildlife while simultaneously depleting their montane environment of crucial moisture.

Other biologists, such as Raymond Huey at the University of Washington in Seattle, believe that tropical lowland species could be just as vulnerable as their mountain-dwelling cousins. Since his graduate-student days at Harvard, Huey has been studying the thermal ecology of tropical reptiles. 'I'm just so struck by how fine-tuned their temperature tolerances are,' he says. 'For example, if you heat an anolis lizard just a few degrees above its preferred foraging temperature, you risk killing it.' Many lowland species in the tropics, Huey believes, are not very heat-tolerant, and are living dangerously close to their thermal maximum.

Other studies seem to confirm this view. During a summer heat wave in 2002, biologists in subtropical Australia were horrified when the flying foxes they were studying began dying in droves. Within nine colonies, at least 3,500 of the giant bats died in one day. At first, the heat-stressed animals sought shade and fanned themselves by wing-flapping. Then, as temperatures climbed further, they panted heavily and licked their fur to promote evaporative cooling. Finally, when the thermometer hit 42°C, many flying foxes fell from the trees and died. Based on an exhaustive literature review, the authors believe such die-offs have become considerably more common since 1994.

The broader implications of such events are illustrated by a 2008 study led by Robert Colwell at the University of Connecticut, published in the journal *Science*. As global temperatures rise, the authors concluded, species residing near the bases of tropical mountains should migrate into the uplands, whereas mid-elevation species should go even higher. But many lowland species – such as those in the vast Amazon and Congo basins,

which lack nearby mountains – will be stuck with nowhere to go. 'We could lose a lot of the lowland species and there'd be nothing around to replace them,' says Colwell. In such a manner global warming might degrade some of the biologically richest real estate on the planet.

### Golden toads in a hole

But not so fast, argue critics such as Joseph Wright of the Smithsonian Tropical Research Institute in Panama: with our knowledge of most tropical species still grossly incomplete, it's too early to conclude that global warming will cause widespread species extinctions. Critics like Wright tend to recall the famous golden toad of Costa Rica, a mountain-endemic species whose demise from global warming was heralded a decade ago. The toad has indeed vanished, but it now seems far more likely that a virulent fungal pathogen, not climate change, was the actual driver.

Such false alarms aside, we still face striking uncertainties about future climate change. We can only guess, for instance, at how high atmospheric CO<sub>2</sub> levels will ultimately rise, or

and his colleagues argued in *Nature* that global warming was indirectly wiping out scores of endemic frog species in the Andean mountains of South America by predisposing them to the same deadly fungal pathogen that evidently killed off the golden toad. Pounds' memorable quote – 'disease is the bullet killing frogs, but climate change is pulling the trigger' – was accepted uncritically by many. Others, however, such as Karen Lips at Southern Illinois University in the US, have recently challenged Pounds' interpretation. Lips believes the pathogen is spreading in a wave-like pattern, much like other epidemics, with little if anything to do with global warming.

### The wages of synergy

Despite these and other uncertainties, a growing cadre of biologists now believes global warming could rival habitat destruction as a threat to tropical biodiversity – or at least that the two threats will conspire synergistically. Increasing habitat loss and fragmentation are likely to trap forest species, preventing

**'Many heat-intolerant lowland species in the tropics are living dangerously close to their thermal maximum'**

how hot it will eventually get. Another big worry is rainfall, which is likely to shift geographically as hotter conditions alter atmospheric circulations. Even a small decline in precipitation might turn some rainforests into deserts, especially if it occurs in the dry season when forests are already stressed and vulnerable to fire. Unfortunately, different projections of future rainfall vary enormously. For example, some global-circulation models predict that the Amazon basin will become marginally wetter by the end of this century, whereas others suggest it will collapse in a rage of droughts and fires.

Yet another big area of ignorance is how global warming will affect species interactions in the tropics. As some species migrate to higher elevations, novel ecosystems – with new combinations of species – will surely emerge. For instance, global warming is likely to increase the prevalence at higher elevations of many pathogens, which generally favour balmy conditions. In theory, this could imperil montane species as they encounter new, highly virulent diseases.

A leading advocate of this view is Costa Rica-based biologist Alan Pounds, who is among the most forceful voices of alarm about global warming. In 2006, Pounds

them from shifting into more favourable climates or elevations. The small, fragmented populations that remain could then be battered by heat waves, droughts, storms and other manifestations of global warming, perhaps vanishing forever.

It's an alarming scenario, and one that has tropical biologists wondering which battle to fight first – habitat destruction or global warming? I would argue that slowing habitat loss is the higher priority, in part because the rapid destruction of tropical forests produces about a fifth of all greenhouse gas emissions today. Hence, saving rainforests is one of the most effective ways to combat global warming, while helping to preserve some of the most imperilled species and ecosystems on Earth.

**William Laurance is a senior staff scientist with the Smithsonian Tropical Research Institute in Panama. The author of nearly 300 articles and five books, he studies the impacts of habitat alteration and global change on tropical ecosystems in the Amazon, Africa and Australasia. A former president of the Association for Tropical Biology and Conservation, he has received numerous awards for his research and advocacy for tropical conservation.**

PHOTOGRAPH: MIKE TRENNERY/WTMA. STEPHEN WILLIAMS, WILLIAM LAURANCE



## Feeling the heat: victims of global warming

■ A high-elevation rainforest specialist, the **white lemuroid possum** (top left) hasn't been seen in more than three years. Australian biologists are uncertain whether it is a unique species or rather a distinctive subspecies of the lemuroid ringtail possum, a dark-brown animal also found only in upland rainforest in northern Queensland. The white lemuroid occurs only at high elevations (above 1,100m) near Mount Lewis, whereas its brown cousin has a somewhat larger, more southerly range and is found as low as 600m elevation. Sadly,

we may never know for sure, because the white lemuroid now appears to be extinct.

■ Researchers in Australia predict that scores of tropical mammals, birds, reptiles and amphibians could vanish if future temperatures rise by more than 2°C. Many tropical species, such as this **chameleon gecko** from Australia (top right) and **hairy caterpillar** from the Amazon (above), may already be living dangerously close to their maximum thermal limit.

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The screenshot shows the homepage of the Ecologist website. At the top, there is a navigation bar with links for HOME, GREEN LIVING, ECOLOGIST TV, PARTNERS, ADVERTISING, ABOUT US, and RECRUITMENT. A search bar is also present. The main content area is divided into several sections: 'Top Story' featuring an article about antibiotics in crops; 'More Stories' with a grid of article thumbnails; 'Ecologist TV & Radio' with a 'Now playing' section; 'Daily Dilemma' with a poll; 'Most Popular Green Living' with a grid of popular articles; 'Behind the Label' with product spotlights; and a 'Calendar' section at the bottom. A 'Newsletter' sign-up box is located in the top right corner. Red callout boxes with white text and red arrows point to various features on the page.

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## » CarrotMob

It has been described as 'reverse boycotting' and started, like most things trendy, in San Francisco.

The idea is simple: approach a number of businesses of a certain type, promising to bring a huge amount of custom to their shop/café/bar if they promise to use a proportion of the takings to make energy efficiency improvements in their property. Play the businesses off against each other to find who is prepared to use the biggest percentage of their takings for green purposes.

Then organise a 'CarrotMob' – like a flash mob, but with the express purpose of bringing custom (a 'carrot' rather than a stick) to the business.

In the US, one CarrotMob put enough money through the tills of one store to allow it completely to refit its lighting with more efficient bulbs.

To find out more, visit <http://carrotmobuk.org>

## BRISTOL COUNCIL TO REAR CATTLE FOR SCHOOL MEALS

Bristol City Council is hoping to run cattle on public land near the M32 motorway to produce beef for local schools.

A 200-acre field has been offered to the council as part of a planning deal that would see the current owners – Barratt and George Wimpey – give the council £1.2 million towards setting up the 'Bristol Beef' project, which would also act as an educational tool.

The next step will involve a feasibility study by Natural England into which breed of cattle would be most suitable.

## Sustainable Communities Act

The movement behind the Sustainable Communities Act legislation is building steam. Seventy-seven councils have now signed up to be able to use the groundbreaking legislation, designed to hand decision-making on important local issues over to communities.

The group behind the Act, Localworks, recently held a packed meeting in London, attended by 300 people and addressed by Julia Goldsworthy MP and Oliver Letwin MP.

Localworks is urging people to keep the pressure on councils that have not yet signed up. Details and sample letters can be found at [www.localworks.org](http://www.localworks.org)

## » Incredible Edible Todmorden

A project to make a West Yorkshire town as close to self-sufficient in vegetables as possible is drawing increasing attention.

'Incredible Edible Todmorden' aims to bring businesses, schools, farmers and the wider community together to produce local food, prepare for climate change and encourage people to develop new skills. Planters previously filled with flowers have been given over to fruit and veg that will be available to the public; the town has planted an orchard of old English apple trees, and the local school now has free-range chicken, eggs and rare-breed pork on its menu.

The website not only helps people find local producers, but also operates a 'land bank' system, allowing growers to find plots for cultivation.

For more details, see [www.incredible-edible-todmorden.co.uk](http://www.incredible-edible-todmorden.co.uk)

» **TippingPoint Commissions** It's easy to forget that making the transition to a low-carbon society is not simply an abstract, scientific problem – it also requires great cultural sensitivity and imagination.

This is the role that network-based organisation TippingPoint hopes to fulfil, by connecting the worlds of arts and climate science.

TippingPoint is now inviting applications for four commissions to create new performance work dealing with climate change. Projects should be designed to stimulate audiences towards the 'radical and imaginative thinking necessary to comprehend a world dominated by climate change'.

For more information, visit [www.tippingpoint.org.uk](http://www.tippingpoint.org.uk)



**Local Hero: Tony Juniper**  
**Campaigner**

From chasing endangered parrots to hunting for the environmental holy grail with Friends of the Earth, one of Britain's pre-eminent eco campaigners wants to take his quest for a better, greener world to the halls of Westminster. **Dixie Wills** meets a man on a mission

**A**nyone who is filled with despair over the environment should spend half an hour with Tony Juniper. He is that rarity among green activists: an optimist. While others might proclaim that the end is nigh and there's not a thing we can do about it, Juniper points to the progress we've already made, the distance we've yet to go and, crucially, how we can get there.

'Ultimately it's about people,' he says. 'That's where we've got to have faith.'

After nearly two decades with Friends of the Earth, Juniper will soon have a rather different opportunity to demonstrate his faith in people (those living in Cambridge, at least) when he stands as a Green Party candidate at the next general election.

To discuss his leap from outsider activist to budding politician I headed for the backstreets of the light-blue university town where he has lived for the past 20 years. He shares his home with his wife, children, springer spaniel and black-and-white cat. Hens scratch contentedly around a coop at the bottom of the garden.

Birds, it turns out, have been a passion right from the start. It explains how Juniper found himself in the middle of the Caatinga – a vast, arid shrubland in north-eastern Brazil – chasing a rare blue parrot called the Spix's macaw. An extremely rare parrot, in fact: 'I discovered the world population was one – it was effectively extinct in the wild. Finding it was an extraordinary moment. For me that was a metaphor for what was going on across the continent, and still is.'

### A force to be reckoned with

It was during his two years as Birdlife International's parrot specialist that Juniper began to take a wider view of environmental problems. 'I became very familiar with the bits of forest across the tropics that were about to be cleared away due to logging concessions being handed out by governments, World Bank projects, pipelines, roadbuilding schemes and the activities of western transnationals,' he says. 'It led me to a slightly

different analysis. We needed to take a holistic view about the failure of the economic and politic circumstances that lay behind all of it.'

His desire to promote such a view led to a position with Friends of the Earth (FoE). His 18-year stint there split neatly into three equal parts: six years running tropical rainforest and biodiversity campaigns, six years as campaigns director, and six years as the organisation's executive director.

'That was an incredible period,' he recalls. 'Looking back it's quite amazing how much ground that we, working with other NGOs, covered in terms of the issues we made tangible progress on. There was the Forest Stewardship Council labelling scheme [those FSC labels you now see on products from exercise books to toilet rolls]. Changing some of the regulations that govern so-called international development agencies like the World Bank. We changed the law governing

**'A lot of people told me there was nothing we could do about GM crops, but they were wrong. So they can get stuffed'**

the protection of wildlife habitats [the Countryside and Rights of Way Act 2000].'

In Juniper's time, FoE was also part of a widespread movement to prevent the commercialisation of GM crops in the UK. 'I remember a lot of people in very senior positions telling me that there was nothing we could do about it, but they were wrong and we were right. So they can get stuffed.' He laughs. There's nothing venomous in his delivery – just a sense of satisfaction at David triumphing over Goliath. He continues with stories of victories in roadbuilding, toxic pollution, recycling and – in his very first FoE campaign – deforestation and climate change.

## Tony Juniper CV

Following a degree in zoology and psychology at Bristol University, various voluntary wildlife posts, some environmental work with primary school children and an MSc in conservation at University College London, Tony Juniper became Birdlife International's parrot specialist. He joined Friends of the Earth (FoE) in 1990 and was its executive director from 2003-2008, and vice-chair of FoE International from 2000-2008. He is now a freelance advisor on green issues and is the Green Party's parliamentary candidate for Cambridge City. His books include *How Many Lightbulbs Does it Take to Change a Planet?* (Quercus, 2007); *Spix's Macaw: The Race to Save the World's Rarest Bird* (Fourth Estate, 2002); and *Parrots: A Guide to Parrots of the World* (Pica/Christopher Helm, 1998).

'The last thing I did at FoE was also on climate change,' he says. The Big Ask, a campaign to which he recruited Radiohead front man Thom Yorke, received a big answer – the 2008 Climate Change Act. While there were other factors that led to the Act, the campaign was certainly a primary driver for the law. 'There's a nice circularity to my time at FoE, with there being this focus on climate at the beginning and end and the circumstances prevailing at those two moments being extremely different. It probably sums up the broader impact of the environmental movement in those years – taking the issues from the margins into the mainstream.'

If it was all going so well at FoE, why depart at all? 'Eighteen years is a long time. There came a moment – in 2007, I believe – when I began to think, "Well, I've done everything I possibly can here. I've restructured it, we've rebranded it, we've won campaigns on just about every subject you can think of, we've developed a good national profile, we're solvent – what more can I do? Maybe if I stick around I'll start fiddling with it and do things that reflect my need for novelty rather than anything FoE needs, so maybe it's time to go"'

### Into the Ecological Age

So began his new role as a freelance green advisor. He's come a long way from the nature-loving Oxford teenager inspired by reading *On the Origin of Species*. Among the many hats he now wears, Juniper is a senior associate at the Cambridge University Programme for Industry (helping make companies more sustainable) and works with the Prince's Rainforest Project. And then, of course, there's the small matter of acquiring a seat at Westminster. I ask him if he ever considered making the attempt with any other party. His answer is emphatic.

'This is the problem: that consensus in the middle ground around economic growth, around 20th-century ideas of social



progression. These are the barriers that have prevented us from getting into the Ecological Age, if you like – the kind of economy and society that can navigate these crunches of global warming and population pressure and resource depletion. None of the major political parties is geared up for that – it's all a question of nuance with them. The only party that is geared up is the Green Party.'

I press him for his assessment of the relative merits of the big three parties. 'Although the Lib Dem rank and file and some of their MPs get [the green agenda], the last three leaders haven't done. The Prime Minister gets global warming, but then he asks OPEC to pump more oil. He sees an economic crisis and suddenly it's a choice between growth and the environment.' And the Tories? 'They do have a leader who gets it – more than the other two – but he's in the position of having a party that doesn't. It's a mirror-image of the Lib Dems.'

Did he ever sit at his desk at FoE and wish he could wield political power? 'No. I was very content with the influence we had. I think there is a qualitative difference between influence on the outside and influence on the inside.'

And how effective is that outside influence? 'Huge. I think the modern environmental movement has been one of the most potent political forces of the past 30 years. Quite major swings in political priorities have taken place. If you think about the levels of awareness in the general public there's been a complete transformation, even since I joined FoE in 1990.'

'However, I think we're getting to a new phase now, because all the things that have

been achieved are pretty non-disruptive in terms of requiring changes to people's behaviour and consumption patterns or to the economy. Whereas now, dealing with all the crunches – resource depletion, population growth, global warming and mass extinction of species – requires a different level of change. It requires getting down into the fundamentals of the economy. It requires culture change and painting a positive picture of how we could navigate this with a high quality of life.'

'But also it needs political change – people in parliament to tell it like it is. If we could get a couple of Greens in Westminster with these priorities: social welfare, environmental protection, economic stability, built around a single idea of how you do sustainability – that would be a very powerful intervention.'

Juniper acknowledges that the Green Party's financial resources are not what he was used

PHOTOGRAPH: FRIENDS OF THE EARTH

### Tony's top five tips for helping to save the world

- 1 **GET INFORMED** Read, get knowledge about environmental issues.
- 2 **GET CONNECTED** Join networks involved in social change, such as Friends of the Earth, Greenpeace or a community group.
- 3 **FOCUS ON ONE ARENA** Don't spread yourself too thinly.
- 4 **BE A LEADER** Set an example with your life and be as inspiring as possible to the people around you.
- 5 **GET A DOG AND TAKE IT FOR A WALK** Never forget the importance of getting a bit of space.

to at FoE, but that's not the only reason he is realistic about his chances of becoming one of those MPs telling it like it is. In 2005, the Liberal Democrats won Cambridge with 44 per cent of the vote. The Green Party took 2.9 per cent. Even in a traditionally volatile seat (Labour took it from the Conservatives in 1997) he has a Herculean task on his hands. The key to attracting voters, he believes, is the Green New Deal. 'It's an idea whose time has come. Energy security goals, low-carbon development goals and kickstarting the economy all as one package... the other parties aren't talking about that.'

### To your polling stations

Juniper does see hope in that what he considers the most important drivers for change outside parliament – the private sector, popular culture, science, the NGOs – are broadly heading in the right direction. 'Blend them all together and you can see the dynamic reaction between all these pieces. I think probably the most important thing for strategy is to work out where to put what piece at what moment. In the meantime, we're being told [by politicians] that the solution to a consumer-driven debt crisis is more debt. The people who crashed the plane are now volunteering to fly the next one.'

And if his fairy godmother allowed him to pass one law? 'I'd have a new official measure of national wellbeing to replace GDP. It would include people's life satisfaction, greenhouse gas emissions and resource consumption, and levels of crime, education and longevity – with an attempt to make sense of lots of different data sets beyond simply how much stuff we're consuming.'

Perhaps the notion that the day might dawn when Juniper comes to draft legislation is not so wild. When I ask what keeps him from becoming jaded, not a heartbeat passes before he replies, 'Unending success!' He laughs, but goes on to justify a response we have not become accustomed to hearing from environmentalists. 'Of all the endangered birds I was working on at Birdlife International 20 years ago, not one has become extinct. Every campaign we ran at FoE had a positive impact, and some of them were resounding victories. I don't get jaded – I keep thinking how many more opportunities there are.'

So, if you happen to find yourself standing as a candidate in Cambridge at the next general election, beware: you'll be up against an engaging and personable opponent whose passion – blended with the unrelenting logic of his arguments – flows out of him like an unstoppable stream. And only a fool would bet against him continuing that run of unending success.

Dixe Wills is a freelance journalist

**'I think the modern environmental movement has been one of the most potent political forces of the past 30 years. Quite major swings in political priorities have taken place'**



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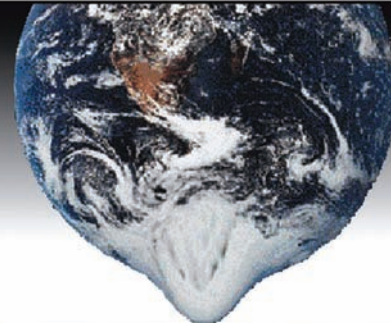
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# ON THE FRONTLINE

This month: forest activists. By Andrew Wasley

**V**irtually everything we buy – food, clothing, household appliances or holidays – comes with an ecological price-tag, but there are often other, unreported, costs attached. Across the globe, a growing number of brave and pioneering activists and journalists face persecution and danger – including violence, intimidation, harassment, censorship and even murder – as they tackle the social and environmental impacts of modern consumerism.

Whether trade union activists in Colombia, fair trade advocates in West Africa or anti-mining campaigners in West Papua, the risks are acute and the stakes high. Those tackling illegal logging and the illicit trade in timber face particular dangers. Logging costs the global economy US\$10-15 billion a year, and there are clear links between deforestation and global warming, as well as serious social justice and human rights abuses involved.

Shockingly, the international community has been slow to recognise the problem, with resources allocated to fighting the trade hardly registering compared to those allocated to fighting the illicit trades in drugs or arms.

So much of the struggle is being fought – in true David and Goliath style – between a small but brave band of activists and campaigning journalists, and the criminal rackets profiting from the plunder of our most biologically important rainforests. Those squaring up to these timber barons are paying a heavy price.

In the Philippines last November, journalist Aristeo Padrigao Monday had his face blown off in front of his seven-year-old daughter in Gingoog City after investigating illegal logging for radio station dxRS Radyo Natin and the *Mindanao Monitor Today*. He had been vocal about the involvement of local politicians. Just months before, in Phnom Penh, Cambodia, journalist Khim Sambo and his son were gunned down in the street. A reporter with newspaper *Moneakseka Khmer*, Sambo often wrote about illegal logging, including the involvement of powerful government figures.

These two are just the latest in a long line of journalists and campaigners to be killed, injured or persecuted while tackling logging. The problem has become so acute in

Indonesia that campaigners created a dedicated security network and emergency 'helpline' for those in trouble. The move followed shocking cases such as that of Arbi Kusno. A tireless exposé of the illicit timber trade, he was attacked by a mob believed to be working for timber smugglers and armed with spears, machetes and hydrochloric acid. Repeatedly stabbed and slashed, one of Kusno's hands and an ear was severed. His injuries were so severe he was assumed dead and carted off to the morgue – only to regain consciousness en route.

In Mexico, in 2007, 20-year-old activist Aldo Zamora was gunned down by assassins angry at his opposition to logging in the Tlahuica indigenous community. In Guarizama, Honduras, in 2006, two forest campaigners, Heraldo Zúñiga and Roger Iván Murillo Cartagena, were butchered by attackers working under the influence of a logging cartel.

The killings followed worldwide outrage at the brutal murder of rainforest activist Dorothy Stang in Brazil's Para state in 2005. The incident shone a rare spotlight on the huge dangers facing campaigners and, for the first time, put the issue on the map.

In February, the European Parliament voted in legislation to help combat logging. Under the proposals, timber companies will be required to prove they are buying and trading legally harvested timber products within the Europe. The measures will see stronger penalties for flouting the law. National authorities will be given the green light to investigate and the power to prosecute abuses.

This goes some way to curtailing the trade in illegal timber, but much of the responsibility rests with timber-hungry consumers. The UK spends a staggering £712 million annually on



illegal wood products, some £11.96 per person. This appetite for cheap wood means the UK is now the world's third-largest importer of dodgy timber, after China and Japan.

Despite the plethora of eco-labelling and certification schemes, high-profile press stories and constant campaigning by pressure groups, British consumers appear to be addicted to cheap timber and blind to the chain of abuses that lie behind many timber products. Each weekend thousands queue up to purchase tables, chairs, cabinets, blinds and other similar, seemingly innocent and unremarkable items. Many are made from illegally logged timber, much linked to conflict, corruption and human rights violations.

In a matter of minutes, the *Ecologist* located online a myriad of products made from wood of dubious origin: snooker cues of ramin, listed as vulnerable by CITES (Convention on International Trade in Endangered Species of wild fauna and flora); floor tiles of merbau, linked to serious ecological injustices; luxury yacht decking of Myanmar teak, supposedly subject to an EU-wide embargo following the Myanmar regime's brutal suppression of democracy protests. The list goes on.

Those responsible for manufacturing, shipping, importing and retailing items linked to controversial timber sources need to be brought to task, but those fuelling the trade by continuing to purchase timber products of dubious or illegal origin need to take responsibility and exercise restraint too.

In this age of ethical enlightenment – here in the UK at least – there should be little room for complacency or ignorance. If consumers can say no to factory-farmed chicken or sweatshop-produced clothes, we can say no to cheap blood timber. For the remaining forests and those battling to expose their destruction, the consequences of continuing to ignore the providence of our timber are simply too great.

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

## For more information

Greenpeace Good Wood Guide  
<http://www.greenpeace.org.uk/media/reports/good-wood-guide>

Forest Stewardship Council  
[www.fsc.org](http://www.fsc.org) <<http://www.fsc.org>>

When Rebecca Hosking banished plastic bags from the small town of Modbury in Devon she received more than 800 emails in one day. Hundreds of people wanted an answer to the same question – how can we do it too?

Modbury was the first town in Europe to turn its back on polythene bags, in May 2007, but since then inspired individuals up and down the country have followed Hosking's

lead, convincing their neighbours to kick the plastic habit.

Based on her experiences, Hosking, a wildlife-documentary-maker, along with six other campaigners from North Berwick, Brighton, London and elsewhere, wrote *Ban the Plastic Bag: A Community Action Plan*. Here, **Sylvia Rowley** digests their advice on how to rid your town of the plastic-bag plague



# HOW TO TURN YOUR TOWN PLASTIC- BAG-FREE

## 1 'Why?' before 'how?'

Why should your town go plastic-bag-free? British shoppers use more than 17 billion plastic bags per year – the equivalent of 350 for every adult. We use each one on average for only 12 minutes before throwing it away. As Hosking says, however, there is no 'away'. Plastic bags are destined for landfill almost as soon as they are created, and add to the 2.8 million tonne mound of plastic waste produced in the UK every year. Some ends up in the sea, with every square mile of ocean now containing an average of 46,000 pieces of plastic, which choke and entangle sea birds and mammals. What's more, plastic bags do not biodegrade; instead they eventually break down into smaller and smaller bits, contaminating soil, waterways and oceans, and entering the food chain when eaten by animals.

## 2 Know your stuff

'Knowledge was the most powerful tool I had in changing opinions,' says Hosking. You need to be able to give informed answers to the questions of traders and shoppers, the first of which is bound to be, 'what's wrong with plastic bags?' Learn about the impact they have on the environment, and about the broader issues such as landfill and unsustainable lifestyles.

Facts and films documenting the damage caused by plastic can be found at [www.plasticbagfree.com](http://www.plasticbagfree.com). Have other success stories to hand: in Ireland there has been a massive (97.5 per cent) reduction in the number of plastic bags given out since shops started charging for them.

Keep up with other plastic bag campaigns by signing up for Google news alerts on 'plastic bags' and joining the plastic-bag-free Google group at <http://groups.google.com/group/plasticbagfree>

## 3 The bags: if not plastic then what?

The ideal is to get people to use a reusable bag made from natural, compostable materials. An average cloth bag will save the owner from using at least 1,000 plastic bags.

You will also need to find alternative disposable bags for shops to stock while people get into the habit of bringing their own bag, however, and for when they forget. Cornstarch and paper are both used in Modbury, but there are many options.

Charging for bags will discourage people from using disposable bags and mean that traders can cover the extra cost of the non-plastic bags, which are more expensive.

A word of caution from Hosking – beware greenwash in the world of 'eco-bags'. What you save the environment in plastic pollution you might unwittingly substitute with species destruction or human rights violations. See [www.plasticbagfree.com](http://www.plasticbagfree.com) for bag options and a list of recommended wholesalers.

## 4 Communicating

You need a core team, including traders, prepared to do much of the legwork and willing to work together for at least a couple years. This group will have to try to get the message out to everybody else!

Tips from Hosking and the others include starting a website, keeping the local press up to date and involving as many existing groups as possible. Making postcards and posters to display in shops, and tying in your campaign with other local events such as festivals can also work well.

Chloë Hanks from Brighton says 'design and professionalism are crucial'. Having a brand or logo and repeating this across all of your materials including bags is a 'simple way of sending out a strong and coherent message'.

## 5 Getting support – free wine helps

'It's crucial to get all or at least the majority of traders involved,' says Hosking. If you live in a large city, start with a smaller area such as a street or borough. An initial meeting to get public support behind you is important. In Modbury, an art gallery donated space and free wine for Hosking's first meeting, and a local pub supplied free finger food. She showed her film *Message in the Waves*, about marine plastic pollution in Hawaii ([www.messageinthewaves.com](http://www.messageinthewaves.com)), provided guests with a booklet on why they should stop using plastic bags, and had examples of alternative bags for people to look at. At the end of the night guests voted a resounding 'yes' to supporting the campaign. A plastic-bag committee was formed and a launch date set.

## 6 Big supermarkets

Handling supermarkets and high-street chains is one of the biggest difficulties for a community going plastic-bag-free. Often chain stores need permission from head office, or even for company policy to change before they can act. Contact the area manager of your local supermarkets and other chains right at the beginning of your campaign to inform them of your plan; if they are unresponsive try head office.

Proof of community support can strengthen

your case. A survey in North Berwick, which showed that 98 per cent of respondents agreed that shops should cease providing plastic bags, persuaded Tesco in Scotland to withdraw bags from its North Berwick store.

## 7 How will I fund it?

'There is no reason why start-up costs should be prohibitive; you just need to work with what you have,' Hosking says. In Modbury, the start-up costs were kept very low and covered by the traders themselves, who each paid £50 towards bag design, posters and setting up the website. The different campaigns around the UK have found various sources of cash, so look around to see who will support you. Friends of the Earth, local councils and community councils, local chambers of commerce, co-ops and recycling charities have all provided funding for plastic-bag-free campaigns.

## 8 The launch

To get the media and residents interested, start your campaign with a bang. In Hebden Bridge, campaigners set themselves a target of getting 80 per cent of shops to remove plastic bags on the launch day. Good PR is essential and a hand-out of at least one cloth bag per household is also a great idea if you can afford it – 'people love freebies,' says Hosking. For brightly coloured bags made from scrap material at no charge, see [www.morsbags.com](http://www.morsbags.com)

## 9 What next?

Keeping up the momentum with monthly information days and anniversary celebrations is important, but why not think bigger? As Hosking emphasises, plastic bags are only the tip of the iceberg of global environment problems. She says her campaign woke up her community to environmental issues, and many traders have now gone beyond thinking about plastic bags, cutting down drastically on packaging and looking into getting rid of plastic water bottles too. Once you've created a community that cares about the environment, you have something powerful in your hands – see what else you can do.

*Ban the Plastic Bag: A Community Action Plan* by Rebecca Hosking et al (Alastair Sawday Publishing, £4.99)

Sylvia Rowley is a freelance journalist

# THE FIRST MASS REMEMBRANCE

The new work by artist Maya Lin, famous for her memorial to US soldiers lost in Vietnam, commemorates the species destroyed and endangered by human action. As the list of the dead grows, **David Hawkins** wonders if the future is set in stone

**R**ecently a small homemade poster appeared on the streets of east London. A grainy, pixellated image illustrated the words 'Missing: Panamanian golden frog'. This species is listed as 'critically endangered' on the IUCN (International Union for Conservation of Nature) Red List, but may in fact have been extinct since 2007. A little piece of public art like this can yank us out of the daily grind and remind us what's going on at the frontiers of the sixth mass extinction (6X) elsewhere in the world. Yet actually this process is happening all the time, and every one of us is implicated.

American artist Maya Lin is going for a more expansive gesture with her new work – *What is Missing?* – to be launched on 22 April, Earth Day 2009. Lin is famous for her controversial Vietnam Veterans Memorial in Washington DC, a long gouge in the earth of a flat green field, lined with black marble teeming with the names of the dead.

The new memorial is going to be very different. It is intended to record all species that have become extinct in recent times. Multimedia and multi-location, it will incorporate a website, a book and video installations. There is a key similarity

between this work and a war memorial, however: both are born out of human action. War is man-made, as is 6X – the first anthropogenic mass extinction.

Extinction is a natural process, but we have exacerbated it, pushing it over a tipping point. The IUCN Red List for 2008 reviewed 44,838 species, of which it concluded that 16,928 (38 per cent) are currently in danger of extinction. Some estimates suggest that on average we are losing a distinct species every 20 minutes. Biologist EO Wilson believes that more than half all species may be gone within a century.

## Evolution, extinction

These creatures represent 3.5 billion years of evolution and survival, of long chains of intricate DNA unspooling. Reading a list of the recently departed, with their exotic, otherworldly names, is like examining a huge box of multicoloured fossils. And it swiftly becomes exhausting. Just as early natural historians of the Amazon were overwhelmed by the vastness of the biodiversity that confronted them, when we try to reckon what is now going or gone we are soon confused. Extinction is hard to deal with. A memorial is a way of ordering these thoughts, of making them solid.

If something becomes extinct it is often

hard to say exactly when it happened. Many species are 'missing in action' – last seen at X, on the night of X – or live in very remote habitats. We don't usually have proof, a public death like that of the po'ouli (a species of honeycreeper) from Hawaii. Ironically only 'discovered' in 1973, the last bird passed away in captivity on 28 November 2004. Frequently, we only hear about a 'new' species when its permanent disappearance is already a foregone conclusion. The title of Lin's work addresses the uncertainty, the unquantifiable mystery of extinction too.

Of course, some things are more susceptible than others. Certain species thrive under the new conditions caused by humanity. In his book *The End of the Wild*, Steven M Meyer of the Massachusetts Institute of Technology divides all species into three categories: ghost, relic and weed. The latter are urban foxes, brown rats and cockroaches. In no way are they all bad, but they multiply and live happily amid the offal of our consumer culture. Relic species are those only kept alive in zoos, national parks or pockets of designated 'wilderness'. Finally, covering a significant proportion of all life on Earth, ghost species are those doomed to extinction, gradually fading away while we look on. Such a terrifying vision highlights the



need for habitat protection, something Lin's memorial will also address, as it focuses 'equal attention on threatened habitats and ecosystems'. A holistic approach to extinction is vital; *What is Missing?* will even remind us of lost birdsong and the dimming of stars through light-pollution.

As biodiversity decreases, so, by extension, does our sphere of consciousness: the world is smaller, simpler, less varied. Studies have shown that ecosystems are more likely to recover from damage, and do so more rapidly, the greater the variety of species there is within them. What's to say that this variety and abundance isn't also tied up with human wellbeing? In the face of this, memory and imagination are more and more crucial. If we don't exercise those mental muscles our minds will narrow with our surroundings. In this scenario, art isn't just a coping mechanism – it's necessary for our survival.

### A growing memorial

*What is Missing?* is an ongoing project – as the list of extinctions can only grow, so too the memorial – but this also means there is still work to be done, awareness to be raised, diversity to be preserved. This paradoxical memorial is a massive call-to-action in disguise, framed as a question it's up to us to answer. Scientific data is the groundwork for the task, but only the arts can enliven our imaginations and jog our memories to the deep remembering we need. By making her memorial into a positive, forward-thinking act, in trying to change people's behaviour and urging them to examine their relationship to biodiversity more closely, Lin ushers in a new approach.

The extinction of any single species, whether charismatic megafauna or minute insect, is a biological tragedy. Lin's work attempts to make something out of that new emptiness. Perhaps the greatest burden that we and coming generations have to bear is a sustained and worldwide effort of remembering. We will have to recollect everything we've lost. What sets us apart as a species is that consciousness, and the grave responsibility it embodies.

In many ways *What is Missing?* looks set to be more like a global network than a memorial. Homing in on biodiversity, sustainability and conservation, it will remind us what we still have left and what's at stake – and that is something to hold on to.

**David Hawkins is a freelance writer and editor**

### What you can do

■ **GET UP-TO-DATE INFORMATION ON SPECIES** with the IUCN's 2008 Red List.

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

■ **FAMILIARISE YOURSELF WITH WHAT'S OUT THERE** and what's at stake using the online database Encyclopedia of Life. This all-encompassing resource is still a work in progress, but soon we'll be crossing more off the list than we're adding. [www.eol.org](http://www.eol.org)

■ **SUPPORT ECOSYSTEMS AND BIODIVERSITY** with Fauna and Flora International, [www.fauna-flora.org/index.php](http://www.fauna-flora.org/index.php), and the Durrell Wildlife Conservation Trust. [www.durrell.org/Home](http://www.durrell.org/Home)

■ **MAKE MORE LINKS THROUGH ECO-CONSCIOUS ARTS** with the RSA Arts and Ecology Centre. [www.rsaartsandecology.org.uk/home](http://www.rsaartsandecology.org.uk/home)

■ **TAKE A CLOSER LOOK AT WHAT IS MISSING?** and Maya Lin's other work on her website. [www.mayalin.com](http://www.mayalin.com)

■ **READ THE INSPIRING EO WILSON** on biodiversity's importance in *The Diversity of Life* or *The Future of Life*, and try the poetry of Les Murray or Peter Reading.



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# DAILY LIFE

Invest in eco art; check your cosmetics; attend a festival of trees; cuddle an organic bunny; celebrate beanpoles; survey British waterways; read. By Laura Sevier

## APRIL

By the time a plastic water bottle gets thrown in the 'recycling' bin it has already generated an environmental footprint well beyond its weight. From extraction and packaging (most are made from PET plastic, a crude oil extract) to transport (some half a billion water bottles are flown or shipped to Britain from overseas every year) and refrigeration, you could fill a bottle a quarter of the way with oil to symbolise how much energy has gone into it. This is not to mention that the 'afterlife' for most plastic bottles still means landfill.

Try quenching your thirst in a more planet-friendly way. Look for reusable bottles made of sustainable materials and free from phthalates and Bisphenol-A, which can leech from regular plastic bottles over time. Swiss company SIGG's new range, for instance, launched last September, fulfils these criteria while also being aesthetically pleasing.

Just like a reusable shopping bag, a bottle like this fits easily into your routines at home, work and play. Just add some tap water and you're good to go.

[www.sigg.com](http://www.sigg.com)

## Spotlight on... reusable water bottles



## 3 THINGS TO DO...

**See** *The Age of Stupid* is the new film from director Franny Armstrong (*McLibel*). It stars Pete Postlethwaite as a man living alone in the devastated world of 2055, looking at 'old' footage from 2008 and asking, why didn't we stop climate change when we had the chance? If the first week's release is a success, the film will expand to more cinemas. It all depends on the box office receipts, so take 10 friends. In UK cinemas from 20th March. [www.ageofstupid.net](http://www.ageofstupid.net)

**Click** As part of its Ending the Cosmetics Cover-Up campaign, the Women's Environmental Network (WEN) has launched Careful Beauty, an online checklist showing which companies' beauty products have potentially harmful ingredients. Find out more at [www.wen.org.uk](http://www.wen.org.uk) where you can also download factsheets and information.

**Do** With good growing land scarce, land-sharing schemes can link would-be veg growers with a patch of green. See 'How to create your own edible landscape' on page 64.



### 1-19 Apr Eco Art

Artist Andrew Squire paints evocative, iconic images of birds and beasts. Compiling a list of some of the animals that have been prominent in western culture and folklore, he realised that many are now threatened or endangered – primarily by changes to their environment. His exhibition, *Andrew's Ark*, is devoted to these animals and aims to raise awareness about their plight. Ten per cent from the sale of each painting will go to the World Land Trust, which preserves and protects critically endangered habitats around the world.

➤ **THOMPSON'S GALLERY, 76 MARYLEBONE HIGH STREET, LONDON W1U 5JU**  
[www.thompsonsgallery.com](http://www.thompsonsgallery.com)



# this month

By Laura Sevier



## PICK OF THE MONTH

### ORGANIC TOYS

The Organic Toy Company stocks toys that are made entirely or partially from organically grown fibres (either cotton or wool). At the very least, each toy's main outer fabric is an organic textile. Pure and safe, they are ideal for eczema-sufferers and babies' sensitive skin. There is a wide range of soft toys to choose from, including these bunnies, available in pink and blue (£19.99).

➤ [www.otoys.co.uk](http://www.otoys.co.uk)



email: [laura@theecologist.org](mailto:laura@theecologist.org) with upcoming events

## FOOD IN SEASON

Broccoli (purple sprouting)  
Cabbage  
Carrot  
Cauliflower  
Chard  
Dandelion  
Endive  
Garlic  
Lettuce  
Morel mushroom  
Nettles  
Onion  
Parsnip  
Potato  
Radish  
Rhubarb  
Rocket  
Sorrel  
Spinach  
Spring greens  
Spring onion  
Turnip  
Watercress

**Dandelion leaves are tastiest in early spring, before the flowers appear**

➤ **How to eat dandelion leaves**

Dandelions are one of the commonest weeds around. Their leaves contain more iron than spinach and make a good tonic tea – the problem, however, is that they can be very bitter. Younger leaves are less so and can be used raw in salads (combine it with other salad leaves, fresh leaves and a zesty dressing) or cooked as a vegetable, like spinach.

## 13-25 Apr BARK! A celebration of trees and woods

A lively arts festival with a programme of films, walks and exhibitions devoted to the trees and woods of Shaftesbury, in Dorset, and beyond. You'll be able to view old gems such as *The Tree of Wooden Clogs* (winner of the Palme D'Or at Cannes in 1978 and described as 'a cinematic miracle') and write a poem about a tree, as well as learning more about the Green Man, ancient trees and the sustainable use of timber. Whether you're based in the West Country or just passing through, get involved.  
[www.barkfestival.co.uk](http://www.barkfestival.co.uk)

## 17-18 Apr UK Aware

Modern life, low-carbon living and saving money can work together – the UK AWARE exhibition will show you how. It's a good place to talk face to face with people who can answer your questions and give you simple solutions. The *Ecologist* has a stand there – come and visit us!

➤ **OLYMPIA TWO, LONDON**  
[www.ukaware.com](http://www.ukaware.com)

## 17-18 Apr Homes For Good 2009

If you're interested in creating sustainable buildings and gardens – from constructing buildings using local, natural materials to energy efficiency measures – this exhibition is the place to visit.

➤ **WESTPOINT ARENA, EXETER**  
**10AM-4PM**  
[www.homesforgood.info](http://www.homesforgood.info)

## Café Maia

Café Maia is an über-green university franchise that recently launched in the University of Leeds' new eco hall. As well as serving Fairtrade coffee and local, handbaked cakes, its menus are printed with vegetable dye, coasters are made from recycled tyres and the wall covering is handcrafted from coconut husk, a waste product that would otherwise be thrown away. The plan is to roll the franchise out to other universities.



## 19 Apr Green Architecture Day

Brighton Permaculture Trust's annual event, held on the Brighton University Grand Parade campus, explores issues around sustainable buildings through illustrated talks by designers and practitioners.

For more information, see [www.brightonpermaculture.co.uk](http://www.brightonpermaculture.co.uk)

➤ **SALLIS BENNEY THEATRE,  
GRAND PARADE, BRIGHTON**

(For directions, see [www.brighton.ac.uk/maps/grandparade](http://www.brighton.ac.uk/maps/grandparade))



# this month



## British Waterways Wildlife Survey

Calling all nature-lovers! British Waterways, which cares for 2,200 miles of canals, rivers and lakes, is inviting people to get outdoors and explore their local waterway. The aim is to spot birds, animals and insects, and to take part in the organisation's sixth annual wildlife survey, which launches in April and

continues until September.

There is also a wildlife photography competition, focusing on Britain's endangered native bumblebee. For the chance to win £100, send in an original photograph of a bee taken close to a canal or river. For more information, see [www.waterscape.com/wildlife](http://www.waterscape.com/wildlife)

## 25 Apr-3 May National Beanpole Week

Britain lost 90 per cent of its coppiced woodland during the 20th century – mainly because many coppice products were displaced by alternatives, which today are often imported. Choosing eco-friendly, locally grown coppiced beanpoles instead of imported bamboo poles helps to protect what remains by supporting the environment, wildlife, rural jobs, ancient skills and traditions. During National Beanpole Week (organised by the Small Woods Association) there are nationwide events including coppice wood gardening workshops and family and beanpole festivals. [www.beanpoles.org.uk](http://www.beanpoles.org.uk)

PHOTOGRAPH: JOHN MARTIN

# \* OUT NOW: BOOKS AND FILMS

## ***The Good Shopping Guide: New edition 7 (Ethical Marketing Group, £14.95)***

Shopping habits can force change. This book, which ranks and compares more than 700

consumer brands, helps you make informed choices about what to buy, whether it's baby food, a new computer or a charity credit card. It reveals which brands are implicated in abuses such as child labour, human rights violations, greenwash and environmental

destruction in the UK and worldwide, as well as showing which companies are deserving of your support.

To receive a copy of *The Good Shopping Guide* for just £10 (RRP £14.95) + £2 postage and packing, go to [www.ethical-company-organisation.org](http://www.ethical-company-organisation.org), follow the links to buy the book and enter the code ro/03 at the checkout. **Or for your chance to win a free copy go to our subscription offer on page 56.**

## ***The Social Entrepreneur Revolution: Doing good by making money, making money by doing good*** **Martin Clark** **(Marshall Cavendish, £14.99)**

If you want to change the world but think 'doing good' won't pay the bills, then reading *The Social Entrepreneur Revolution* will change your ideas. From Jamie Oliver to Muhammad Yunus, author Martin Clark

profiles the key champions and heroes behind the emerging movement of social entrepreneurs. With practical information

on what social entrepreneurship is, how to get into it and the wide range of global and local social enterprises around the world, this is an inspiring toolkit that will help anyone do business in a way that benefits the community.  
*Matilda Lee*

## ***The Green Kitchen*** **Richard Ehrlich** **(Kyle Cathie, £12.99)**

With techniques for cutting energy use, saving money and reducing waste, as well as tasty-looking recipes that put theory into practise, this is an excellent guide for all wannabe green cooks. It's organised according to eco-friendly cooking methods such as lidded cooking, and there's advice on cooking for multiple meals, freezing and the most efficient way to wash up.

## ***Weather the Storm*** **directed by Charles Menzies and Jennifer Rashleigh** **(Bullfrog Films)**

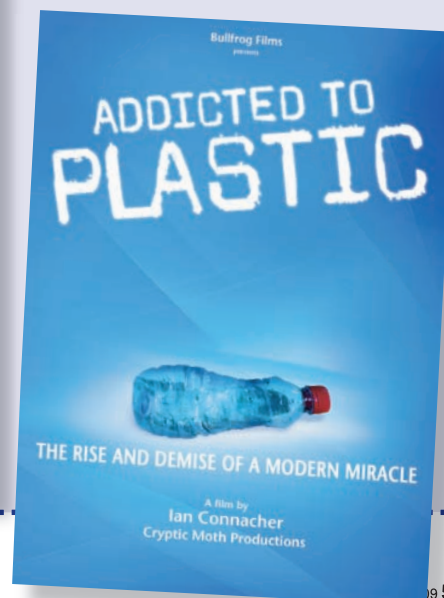
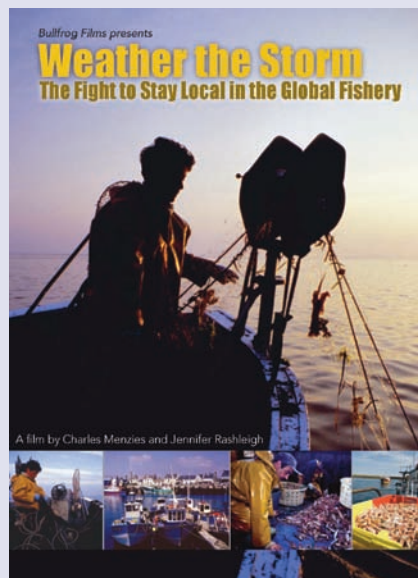
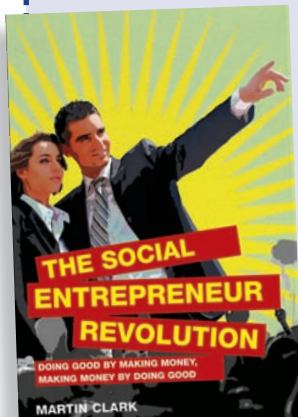
This short documentary describes how and why local fishing techniques are the only sustainable option. It features interviews with local fishermen who reveal alarming truths about the effect industrial fishing

methods are having on local communities. A French fisherman tells of how one

industrial fishing vessel appeared in local waters and caught the entire year's quota of mackerel, thereby making it illegal for local fishermen to continue fishing for the same species. *Weather the Storm* gives a voice to an important group who may have the solutions we need to the problem of unsustainable fishing. To order, see [www.bullfrogfilms.com/catalog/wstorm.html](http://www.bullfrogfilms.com/catalog/wstorm.html)  
*Fred Groom*

## ***Addicted to Plastic: The rise and demise of a modern miracle*** **directed by Ian Connacher** **(Bullfrog Films)**

Cheap, versatile and virtually indestructible, plastic is a hugely influential material that represents the worst of our throwaway culture. This eye-opening and sharply edited documentary follows inquisitive film-maker Ian Connacher as he travels the globe, detailing plastic's path over the past 100 years. Most shocking is the return journey to the Pacific ocean, where plastic from all over the world accumulates and its toxic legacy poisons the sea. The documentary also looks at practical solutions to recycling, toxicity and biodegradability offering us some clear thinking on the curse of this modern miracle. To order, see [www.bullfrogfilms.com/catalog/atp.html](http://www.bullfrogfilms.com/catalog/atp.html)  
*Phil Moore*



# LOOKING AFTER THINGS IS IN OUR NATURE

For more than 27 years Ecover has pioneered the development of effective, ecological cleaning products, working continuously to give you a complete home cleaning range that is spectacularly powerful and supremely ecological.

Throughout, Ecover have stayed true to their roots, with ecology at the heart of every decision made. Today Ecover is renowned as much for the way in which it educates and gently encourages consumers to help them make ecological choices, as it is for its high quality products.

## ECOVER'S ECOLOGICAL FACTORIES

A key area for reducing the impact of cleaning products is during their manufacture, so in 1992 Ecover opened the world's first energy efficient Ecological Factory in Belgium. It's built largely from recycled and recyclable materials, and is designed for energy efficiency.

Sustainability is a cornerstone of the factory, which has its own water purification system, is designed to maximise natural light and is insulated



Above: Ecover's First Ecological Factory in Belgium is positioned to save energy on lighting by making the best use of natural light throughout the day.

with a plant-covered roof to reduce energy for heating. It buys electricity from a green supplier.

A sister factory in France followed in 2007 to help Ecover keep up with the demand for our products, so a big thanks from the new factory to everyone who's been using Ecover all these years.

## LOOKING AFTER WATER

Ecover recognises that clean water is one of the world's most precious commodities and chooses for its products renewable plant & sustainable mineral ingredients that have the absolute minimum impact on aquatic life.

It is after they have been used and released into water systems that cleaning products can do harm. Ecover uses a method known as Critical Dilution Volume to help consumers understand the amount of water it takes to neutralise cleaning products.

For instance, Ecover Toilet Cleaner takes an amazing 400 times less water to neutralise after use than its nearest competitor. If just 5% of families in the UK switched to Ecover Biological Washing powder the equivalent of half a million Olympic swimming pools worth of water could be saved in a year.

Choosing ecological products for your home is an easy way of saving water, because they take so much less water than conventional brands to clean up after you've pulled the plug.



## WORKING WITH WATERAID

In 2008 Ecover launched a 3 year partnership with **WaterAid** to fund project work in rural Ethiopia. The project will provide long term, sustainable access to water, hygiene education and sanitation for nearly 15,000 people across 11 villages. Only 22% of Ethiopia's population have access to safe water and so 17 out of 100 children die before they are 5 years old.

Access to safe water and sanitation enables people to take their first steps out of poverty. That is what Ecover is determined to give.

## FIND OUT MORE AND PICK UP A FREE WATERCARE PACK

Follow the links from [www.ecover.com](http://www.ecover.com) - you can find the full story and regular progress updates about Ecover's work with WaterAid in Ethiopia - and apply for a free watercare pack, which has lots of information about saving water in your home, plus a free Hippo water saver.



# ECOVER®

POWERED BY NATURE

### Would Jesus have been an environmentalist?

The world in which Jesus lived was, for many, poor, nasty, brutish and short. Survival in a hostile environment was top priority, and of course industrial and commercial activity and its side-effects were undreamed of. But there is huge biblical evidence of a deep reverence for the physical world as God's creation, of which human beings are the stewards, and of their unquestioned dependence on it for physical sustenance of every kind. These two notions would not have been separate in the minds of the people of Jesus's time.

### Do we humans have a moral duty to save the planet?

We certainly have a duty not to destroy it, or to render it or parts of it uninhabitable to other species and our own descendants. There is a sense in which the present economic crisis is the symptom of a self-centred and delusional short-termism, which kidded itself that everything was fine and would carry on getting better indefinitely. Happily, as far as the planet is concerned, that bubble burst a while ago, and we are now in no doubt about the dangers of not changing our ways. We must look beyond ourselves and our present comforts.

### Are you hopeful that we can tackle climate change? Do you think we can save ourselves?

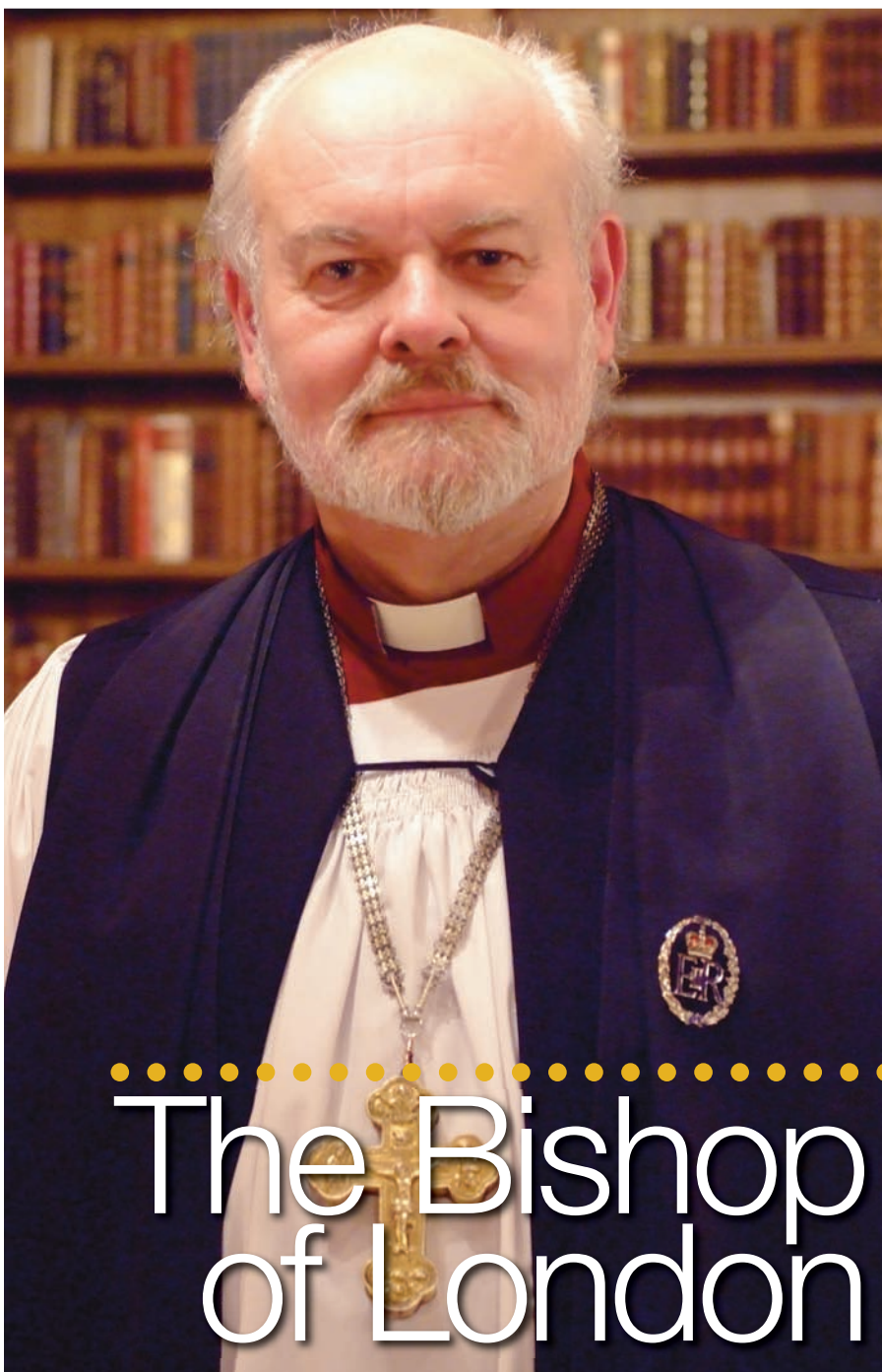
I am certainly hopeful – that is different from being optimistic. I believe we have a good chance of stopping irreversible and calamitous damage if we act courageously, and act now.

### What environmental organisations or movements do you most actively support?

The Church is able actively to work with many organisations in this field, with which we share both a vision and an agenda for action. I have been impressed by the work of Friends of the Earth.

### What book or film would you recommend that all politicians should read?

*Babette's Feast* (1987), the story of a young French cook who blows an entire lottery win on preparing a sumptuous banquet for the puritan inhabitants of a bleak Danish village who had taken her in years before when she fled from civil unrest in Paris. Its themes are compassion, gratitude, sacrifice and redemption. It teaches that service is its own reward, and that unforced human goodness is a reality. A humbling antidote to the cynicism and greed that can tempt the powerful.



### What is the Church doing to lighten its carbon footprint?

The Church of England has a national strategic campaign called Shrinking the Footprint, which aims to enable its members and institutions to shrink their environmental footprint to create the 'The 20 Per Cent Church'. A series of strategic initiatives and partnerships will change our activities, structures and processes, producing sustainable reductions in the Church's carbon emissions to 20 per cent of current levels by 2050. And we are making progress: between

2005 and 2007, churches in the diocese of London reduced their collective CO<sub>2</sub> emissions by 12 per cent.

### Do you believe that nature is sacred?

I believe that nature is God's creation, that he created it to sustain and delight us, and that we should treat it accordingly.

### What words or passages in the Bible do you find most comforting in times of despair or darkness?

'Be still and know that I am God' (Psalm 46:10).





# Best by a nose

Unsustainable and bad for the environment, industrial viticulture leaves a bad taste in the mouth. Pesticide-free and weed-friendly, biodynamic wine holds the key to an organic revolution, says **Monty Waldin** – and it tastes great too

**W**hoever organised the launch of New Zealand's first 'carbon-neutral' winery a couple of years back can't have had much fun.

New Zealand clocks up more air miles than any other wine exporter, dependent as it is on exports to the UK, where New Zealand has an impressive 10 per cent share of the UK's lucrative more than £5 per bottle market.

As wine is now worth more than wool to the New Zealand economy, it would be a heavy blow if eco-conscious consumers in far-flung lands decided to boycott New Zealand plonk because of its heavy environmental footprint.

As a result, a carbon-neutral winery seemed to tick the right environmental boxes. That is until one of the launch guests asked, having correctly spotted that the vineyard next to the

marquee appeared to have been sprayed with weedkiller, 'You are organic as well, aren't you?'

The winery had to admit its PR disaster before converting the vineyard in question to certified organic as soon as it could.

Because of New Zealand's wet climate – think two tiny islands surrounded by a big ocean – weeds are a problem; not so much because they steal food and water from vines, but because they grow so high in spring. Tall weeds increase the risk of frost wiping out the buds that produce the grapes that generate the export dollars of arguably Planet Wine's most profitable wine industry.

New Zealand has made a big deal out of its Sustainable Winegrowing initiative (SWNZ), which basically says it's okay to spray weedkillers, but try not to spray too much, too often. Encouraging winegrowers to reduce weedkillers and other toxic vine sprays can be

a useful first step towards abandoning them altogether. The carrot that 'sustainable' programmes such as these – called IPM (Integrated Pest Management) in Europe – dangle in front of conventional winegrowers is that using less weedkiller saves money, but I'm still not sure how sustainable this is, not just on an environmental level, but on an economic one too.

The economic argument has it that to be sustainable environmentally you must first be sustainable economically. In other words, abandoning weedkillers by going organic/biodynamic makes no sense if wine quality suffers or costs increase so much you go bankrupt. Weedkillers are a cheaper way of controlling weeds in New Zealand than the organic/biodynamic alternative of ploughing. This is because usually only one pass with the tractor is needed each year when removing

## WINE

weeds chemically, with weedkillers, whereas it takes several passes to remove weeds physically by ploughing. And until now weedkillers have made sense because the cost of cleaning weedkiller pollution from groundwater has been borne by the public rather than by weedkilling vineyard owners.

This cost-benefit scenario may be changing, however, because one New Zealand vineyard has recently had to pay compensation to a local resident who suffered physical and psychological injury from weedkiller spray drift. I think this proves that so-called 'sustainable' programmes don't go far enough, and suggests conventional agriculture is reactive rather than proactive.

Organic/biodynamic wine growers must adopt a prevention rather than cure approach in order to survive, not just in dealing with pests and diseases (there are no magic organic sprays capable of removing pests and diseases after they have taken hold), but environmentally too.

This is why organic/biodynamic growers are already reducing or eliminating ploughing of weeds altogether. Leaving grass and weeds in place may mean fewer grapes, but this is good for quality and saves tractor diesel.

### Drought down under

New Zealand is not the only wine exporter tying itself in knots over sustainability, with some Australian wineries trying to develop a PR line in wetland preservation. These are often the same Australians who are Planet Wine's most enthusiastic users of irrigation, which deprived the wetlands of their water in the first place.

Come on, you didn't think all that cheap Chardonnay you've been guzzling for the past 15 years and invariably labelled 'South-Eastern Australia' came at no environmental cost, did you? The Murray and Darling rivers, which are crucial to Australian farming in general and winegrowing in particular, are running at their lowest levels in a century.

It's easy for wineries to launch very public but territorially insignificant 'let's preserve our wetlands' projects, while still irrigating the huge vineyards that supply the wines that drive their profits.

Or at least they did drive profits, until – surprise, surprise – the market was flooded (excuse the pun) with cheap, irrigated wines from the likes of Australia, Argentina, Chile, California and South Africa.

Even if they become uneconomic to farm, as irrigation water dries up and the market collapses, ripping out vines won't necessarily mean nature has earned a reprieve. The kind of drip-irrigated vineyards pioneered by Australia leave behind excessively saline soils that native plants can't automatically recolonise once the wine bandwagon rolls out of town.



**Above: Horn-stuffing is the simple process of making biodynamic manure. Simply stuff fresh cow manure into a cow horn, bury it and wait six months**

**Right: Compost-prepping. The piles of compost are covered with straw or old cardboard to keep them warm over winter**



### Viruses on the veld

South African vineyards are also trying to convince us they really do care about native habitats, habitats that provide arguably the most beautiful backdrop of any national vineyard worldwide.

Despite empowerment projects that aim to get more black employees into stakeholder positions, the South African wine industry is still hideously white – that's why I have trouble accepting that white South Africans really do know what's best for land they forcibly took from the locals and then farmed in an unsustainable way. If their winegrowing was so sustainable, why are they now so concerned about native habitats?

I'm not being cynical, just realistic. The predominant view in the South African wine industry is still that organics/biodynamics doesn't work economically or environmentally. This is because, as in New Zealand, key industry positions tend to be

held by those who trained at universities whose curricula encouraged the view that chemical agribusiness had all the answers. It's no coincidence that South Africa leads the world in GM grapevine research, and it's also no coincidence that South Africa still, despite recent replanting, has the most virus-affected vineyards in the world.

A virused vine poses no risk to human health but tends not to produce very drinkable wine because the virus makes the vines less good at converting the sun's heat and light into ripe-tasting wine. Why are there so many virused vines? Because the natural predators of the virus-carrying insects got wiped out when their habitat was removed, and also by the insecticides recommended by the universities to control the virus vectors.

So yes, it makes sense for South Africans to want to preserve wild habitats, but as the wineries wanting to be called 'sustainable' must have a certain amount of 'wild habitat',



**Left: The biodynamic horn manure is then buried in an earth pit for six months between autumn and spring – the period when the earth is most alive**

**Below: The finished product. Biodynamic horn manure is a dark, humus-rich substance. This is diluted in water and sprayed on to the soil to attract worms into the vineyard**

it won't be long before winegrowers needing to tick the right eligibility boxes will, absurdly, have to start planting 'wild' habitat.

You can understand why environmentally conscious producers get so irate at having been looked down on for so long as somehow backward, when to be organic/biodynamic you must be independently, third-party certified, whereas wineries that sign up to 'sustainable' wine schemes in New Zealand, South Africa, Australia and California are not yet subject to independent audits and can still pretty much spray what they like, when they like.

### **Biodynamic benefits**

People find some of the principles behind biodynamics absurd – pruning, ploughing,

picking the vines and even bottling the wine by lunar cycles – but the bottom line is that biodynamics is the oldest organic agricultural movement in the world, and the only one specifically to make sustainability and self-sufficiency a benchmark principle. The fact that natural cycles are respected is one of the reasons no biodynamic cow has ever got mad cow disease. If you want to farm cows, the biodynamic theory goes, make sure they have enough of the right food: grass in the fields they are living on and absolutely not ground up bits of dead cows trucked in from miles away. This way you avoid air miles and, even more conveniently, any risk of BSE.

It's the same for biodynamic vineyards.

Fertilisers produced at huge environmental cost by the petrochemical industry and then trucked in are seen to make vines grow so quickly they get diseases which then need treating with yet more petrochemicals.

The biodynamic approach tries to avoid this scenario by giving back to the land whatever is taken out. You compost all the stuff left over after winemaking – the grape stems, skins, pips and so on – and return it to the soil.

The advantage of compost over chemical fertilisers is that compost contains worms and other organisms that bring life, not just substance (food), to the soil. Biodynamic winegrowers are also statistically the most likely to bring livestock back into the vineyards: horses (instead of tractors) for ploughing, and cows for the manure that helps make the best compost. A cow, let's not forget, needs just two acres (one hectare) of land to live off, but her manure can fertilise another two on top of that (two hectares). There's a reason they don't kill cows in India.

If you have ever used your foot to lift the crust off a nearly fresh cow pat in a cow pasture you'll usually see plenty of worms wriggling around underneath. That's why biodynamic growers spray a specially prepared cow manure liquid called 'horn manure' on the soil – to attract worms and other soil organisms into the vineyard. These organisms help keep the soil alive and friable enough for vine roots to be able to dig deep into the subsoil where all the best vine food is found. Deep-rooting vines are not only inherently better able to cope with bad weather – heavy rain and drought – so





A vineyard suffering from soil erosion as a result of weedkiller use

the wines taste neither diluted nor baked in bad years, but also produce wines with the most *terroir* – driven flavours. It's this kind of prevention-rather-than-cure philosophy that sets biodynamics apart.

Biodynamic vineyards are supposed to be self-sustaining organisms. Yes, you read that right. Organisms. Living, self-sustaining things. In contrast, modern agribusiness has turned vineyards into mere conduits, whereby a bunch of stuff arrives at the farm gate at the start of each year – fertilisers, weedkillers and systemic fungicides – and a bunch of stuff leaves at the end of the year in the form of wine. It's no surprise that soils become depleted in vineyards such as this.

And it's also no great surprise that wines made in this mechanistic way tend to taste the same wherever they are grown.

## Grow your own everything

The biodynamic approach seems to me to tick all the boxes that the 'sustainable' vineyard schemes mentioned above are searching for.

You get scenic vineyards because biodynamic growers actively encourage native plants to thrive alongside the vines. These plants provide the habitat that gives the best insect-control, and native grasses

are also best at preventing soil erosion.

Bringing livestock back on to vineyards is also a great draw for wine tourists. Children can watch horses ploughing while the parents are tasting the wines. When I had my vineyard in France ploughed by horse, a throng of locals gathered. 'We haven't seen a horse in this vineyard for 30 years,' said one. On top of this, a horse clearly burns less tractor diesel than, er, a tractor.

Biodynamic growers are also statistically the most likely to collect rainwater for vineyard sprays, especially for biodynamic sprays based on cow manure (to encourage worms) and medicinal plants (stinging nettle, camomile, horsetail), which build vines' self-defence mechanisms.

It's small acts like this that make sense. Yes, it's great that wineries in California and Spain can't put solar panels up fast enough on their roofs, but they only started doing this as a result of tax breaks and subsidies. Again, the dominant attitude is reactive rather than proactive. This is perhaps driven by our modern culture in general and by our farming culture in particular.

Solar panels seem great because they come at a fixed cost and are not perishable. Farm produce such as wine, on the other hand, has variable costs (the weather can destroy a year's grapes in a morning) and is perishable – in other words, you don't have an unlimited time to sell your wine before it goes off. You are at the mercy of the weather and the market: a double whammy.

That's why it makes sense to generate as much stuff on the vineyard as you can: cows for compost for fertilisation; using local natural resources in the best way possible – collecting rainwater and recycling cleaning water used in the winery (it's often claimed that it takes seven litres of water to make just one litre of wine) – and diversifying when times get tough.

It would have made much more environmental sense for our carbon-neutral New Zealand winery to have abandoned its idea of flying in a bunch of journalists all the way from Britain to its launch. It would have done better to use its money and energy creating a vineyard garden to attract beneficial insects to its vines and producing food for the winery restaurant.

This would have created local goodwill, made better wine and saved money – and the winery would have given itself more of a chance of selling its wine direct from the winery door, instead of on the other side of the world.

That's the kind of wine business that really does start making carbon-neutral sense.

**Monty Waldin is writer, wine critic and biodynamic winegrower**

## Top 10 Bio Wineries

*Third-party certified organic/biodynamic*

### ■ ALBET I NOYA, SPAIN

[www.albetinoya.com](http://www.albetinoya.com)

Catalan winery that proved consumers would buy organic wine only if it tasted consistently ripe, clean and fruity, not purely because it was organic.

### ■ BONTERRA, CALIFORNIA

[www.bonterra.com](http://www.bonterra.com)

California's first and arguably best organic/biodynamic wine in terms of consistency, quality, value for money and environmental leadership.

### ■ BÜRKLIN-WOLF, GERMANY

[www.buerklin-wolf.de](http://www.buerklin-wolf.de)

Germany's biggest biodynamic vineyard. Winemaking leftovers are composted with manure from the estate's animals, including the horses replacing tractors.

### ■ CHAMPAGNE FLEURY, FRANCE

Jean-Pierre Fleury has inspired a new generation to bring Champagne's heavily sprayed soils back to life using biodynamic compost and winter covercrops (wheat, barley, flowering clovers) between vines.

### ■ CULLEN, WESTERN AUSTRALIA

[www.cullenwines.com.au](http://www.cullenwines.com.au)

Top-quality family-run vineyard offsetting carbon emissions via tree-planting and moving towards polyculture by growing beans and tomatoes between vine rows.

### ■ EMILIANA ORGÁNICO, CHILE

[www.emiliana.cl](http://www.emiliana.cl)

Chile's biggest and best biodynamic wine project. Investment in compost, livestock and habitat for beneficial insects has paid off as wine quality improves every year.

### ■ LAVERSTOKE PARK FARM, ENGLAND

[www.laverstokepark.co.uk](http://www.laverstokepark.co.uk)

Model biodynamic arable/livestock farm with sparkling wine vineyard described not disingenuously as the 'biggest smallholding in the world'.

### ■ MILLTON, NEW ZEALAND

[www.millton.co.nz](http://www.millton.co.nz)

James Millton was derided for pioneering biodynamic wine in New Zealand but is now widely admired. Has cows 'both for compost and company'.

### ■ STELLAR ORGANICS, SOUTH AFRICA

[www.stellarorganics.com](http://www.stellarorganics.com)

Groundbreaking winery whose owners have proved that growing organic grapes in South Africa wasn't as hard as local wine industry bigwigs claimed.

### ■ TERRA D'ARCOIRIS, ITALY

[www.terradarcoiris.it](http://www.terradarcoiris.it)

Swiss-owned Chianti estate where vines grow in soil that is never ploughed. Result: erosion-free vineyards, no wasted tractor diesel, superbly concentrated wines.

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# BEET IT organic beetroot juice

Many of us have high blood pressure but are not aware of it...

According to the Blood Pressure Association, there are about 16 million people in the UK with a blood pressure higher than 140/90mmHg - the upper limit of normal. This means that one in every three adults now has high blood pressure, and sometimes the first symptom will be a stroke or heart attack.

Current treatment is with tablets, but unfortunately many patients do not like taking tablets every day and the treatment is essentially lifelong. This is what makes the recent research by a group of doctors at St. Bartholomew's and the Royal London Hospital particularly important - they have shown that a daily dose of natural beetroot juice can have as much effect on blood pressure in healthy volunteers as a conventional tablet prescribed by a doctor.

### Why beetroot juice?

Beetroot is unusual in that it contains very high levels of nitrate.

"Ten years ago, when we started this research, everyone thought nitrate was a toxic substance which should be avoided, but it was then realised that our own body makes this mineral and concentrates it in our saliva," says Professor Ben Benjamin. "Bacteria on the surface of our tongue convert the nitrate to a more reactive chemical, nitrite, which when swallowed very easily converts to nitric oxide. This is a very powerful substance which is continually made by our blood vessels to keep our blood pressure low, and is also made in large quantities by white cells in our bloodstream to fight infection. It is also very important in preventing blood clots from forming in arteries by stopping platelet activation".

Professor Amritav Ahluwalia, who led the beetroot juice research explains, "the magnitude of the blood pressure reduction surprised us all. The results suggest that the nitrate in beetroot juice acts like a natural aspirin to prevent blood clots and protect the lining of blood vessels, as well as having the additional beneficial effect of lowering blood pressure. I am very excited about what our future researches will reveal."

Warning: Drinking beetroot juice may turn your urine pink!



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# CAN SILVER EVER BE ETHICAL?

From country cousin to king gold, silver is slowly cleaning up its tarnished reputation. By **Matilda Lee**



**G**oldsmiths' Hall, with its elaborately ornate interior and centuries' old 'silver service' collection, may be steeped in tradition but the 14th-century London-based hallmarking company has grudgingly accepted the need for a 21st-century ethical makeover.

'Silver is ethical in the sense that it is never thrown away,' says Dick Melly, clerk of the Goldsmiths' Company. 'Historically, the silver industry has always recycled. It can be melted down and reused again and again. The problem is getting it out of the ground.' Quite.

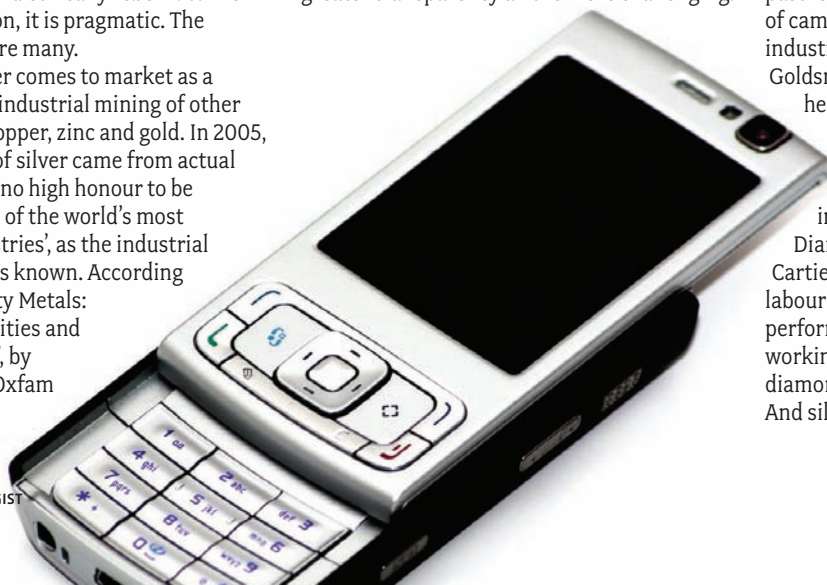
For many in the industry, the only 'ethical' silver on the market is deemed so because it is recycled – as if the sins of a first life can be washed away – and ethically reborn. While not the best option, it is pragmatic. The reasons for this are many.

Generally, silver comes to market as a byproduct of the industrial mining of other metals, such as copper, zinc and gold. In 2005, only 30 per cent of silver came from actual silver mines. It is no high honour to be grouped into 'one of the world's most destructive industries', as the industrial mining industry is known. According to the report 'Dirty Metals: Mining, Communities and the Environment', by Earthworks and Oxfam America, the

environmental and social costs of metals mining include using as much as 10 per cent of world energy, arsenic emissions, cyanide and mercury poisoning, child labour and human rights abuses, as well as vast landscape damage.

But whereas 80 per cent of gold mined each year ends up in jewellery, making it a centralised target for change and consumer campaigns, only about a quarter of the world's silver goes into jewellery and silverware. Because of its electrical and thermal conductivity, silver has very broad usage, from plasma display panels and x-rays to its use in the fabrication of solar photovoltaic cells. Needless to say, this has made a sustained consumer campaign for greater transparency all the more challenging.

While retailers and manufacturers of silver jewellery and silverware have become increasingly interested in ethical issues in the past few years, attention is mainly a byproduct of campaigns in the gold and diamond industry. In 2005, the National Association of Goldsmiths, which represents retailers, helped found the Responsible Jewellery Council (RJC), made up of the British Jewellers' Association (manufacturers) as well as such industry titans as BHP Billiton Diamonds, Rio Tinto, the Signet Group and Cartier. Its aim is to tackle human rights, labour standards and environmental performance issues in the industry, and it is working on an accreditation scheme for diamond and gold jewellery supply chains. And silver? 'Tracing metals is very difficult



and expensive, and very easy to adulterate,' says Peter Taylor, director of technology and training at the Goldsmiths' Company. 'It will require creating an entirely new supply chain.'

Greg Valerio, founder of Cred jewellery and the Association for Responsible Mining (ARM), begs to differ. 'The RJC is green lip-gloss,' he argues. 'It's not difficult to trace, they just don't want to do it. We do it and I'm a small company with four employees. It will mean completely opening up supply chains and the how, where and with whom they do business. It means accountability. They don't want that.' Greg initially sought out ethical silver jewellery, but says 'the frustration was that we couldn't find fair trade silver sourcing; it wasn't there. The silver industry hasn't received as much attention as gold or diamonds'. He is now part of a group that is helping to establish certified Fairtrade gold, which should be launched late 2009.

In July 2008, Walmart, itself the target of many a consumer campaign, introduced its Love, Earth jewellery line, which is responsibly sourced and can be traced online by entering a product code. Walmart says the line is a 'first step' in having all the gold, silver and diamonds sold in Walmart come from mines

and manufacturers that meet criteria for responsible sourcing. It claims 10 per cent of all jewellery it sells will come from a traceable source by 2010.

## What's mined is yours

Patrick Schein, a trader and refiner of precious metals, and founding director of the Ethical Bullion Company, says that whereas 'the mining industry now has techniques becoming more enviro-friendly, you can't mine without leaving an environmental footprint. The big issue is ownership. Many mine workers struggle to earn a livelihood. The ratio of societal value in large-scale mining is much lower than in small-scale mining. Small-scale mines employ more people, don't use up deposits as quickly and the revenue stays in the community'. There are an estimated 100 million families and dependants involved in small-scale mining throughout the world.

Jane Hope, a teacher of applied arts at Plymouth College of Arts, who also spent 20 years as a jeweller, felt her students ought to know where their materials come from. After 18 months researching 'ethical silver', she visited the historic heart of silver mining, above the Andean city of Potosí in Bolivia, the silver from which financed much of the Spanish empire. 'It was a real eye-opener,' she says. 'Nine million miners have lost their lives in those mines over the past 450 years. Today it's a real mess, and the current restoration project can only do so much to restore it to its initial state. The carbon footprint of the extractive industries is vast. Strictly speaking, there is no ethical silver because there is no such thing as ethical mining.'

As ethical issues become increasingly complicated so do answers to ethical

dilemmas become less clear-cut. Philip Newman, a metals analyst at precious metal consultancy GMFS, says more and more of the silver used for industrial purposes is being recouped and reused. 'A lot less is going into landfill, because of stronger environmental legislation and the fact that you can recoup costs by selling it on,' he says. Last year, the total 'scrap' or recycled silver was 5,649 tonnes out of a total of 26,241 tonnes of new silver. Every dark cloud has a silver lining.

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



## Ethical jewellers

- **Cred** Fairly traded and recycled gold and silver jewellery. [www.credjewellery.com](http://www.credjewellery.com)
- **Made** Jewellery created by independent artisans from impoverished communities using sustainable resources. Available at [www.adili.com](http://www.adili.com)
- **Fifi Bijoux's Tierra silver line** Comes from a previously abandoned mine in Bolivia. Mined without the use of mercury or cyanide. [www.fifibijoux.com](http://www.fifibijoux.com)
- **La Jewellery designer Lisa Anne Dickenson** uses recycled silver jewellery made in Wales. [www.lajewellery.co.uk](http://www.lajewellery.co.uk)

## ORGANISATIONS

- **Ethical Metalsmiths** connects jewellers and others in the industry with responsibly sourced materials. [www.ethicalmetalsmiths.org](http://www.ethicalmetalsmiths.org)
- **Alliance for Responsible Mining (ARM)** [www.communitymining.org](http://www.communitymining.org)
- **Holts Academy** is planning an Ethical jewellery short course for April 2009. [www.holtsacademy.com](http://www.holtsacademy.com)
- **The National Association of Goldsmiths' Green Achiever scheme** [www.greenachiever.co.uk/nag.htm](http://www.greenachiever.co.uk/nag.htm)
- **Responsible Jewellery Council** Set up in 2005, certification end March 2009. [www.responsiblejewellery.com](http://www.responsiblejewellery.com)

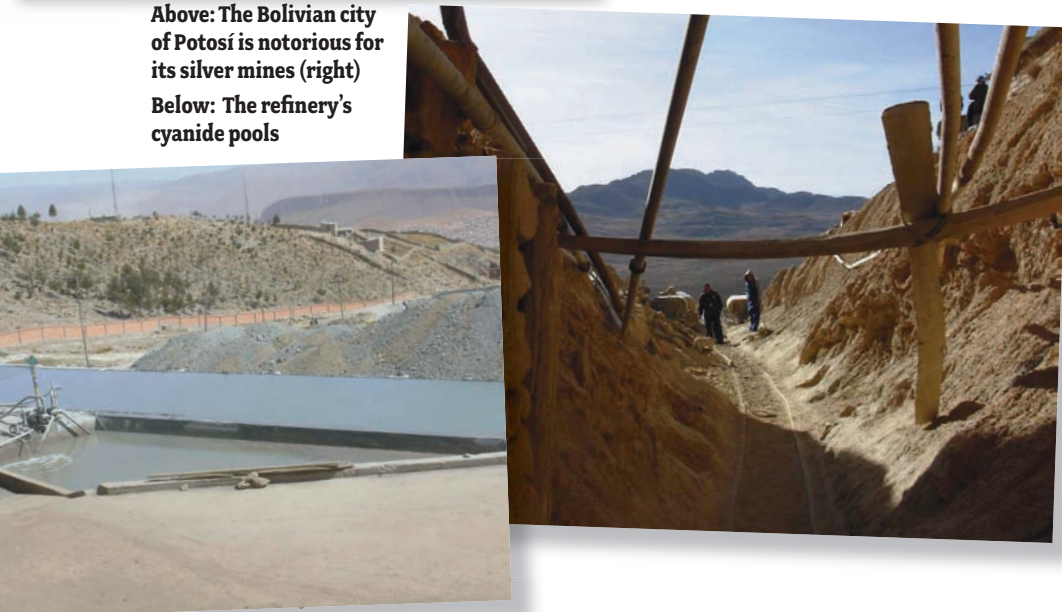
## SUPPLIERS OF RECYCLED SILVER

- **Academy Green Silver** Silver manufacturer and refiner using recycled silver from various sources in closed-loop processing. [www.academygreensilver.com](http://www.academygreensilver.com)
- **Hoover & Strong** (in US) sells recycled metals - **Harmony** - recycled silver



Above: The Bolivian city of Potosí is notorious for its silver mines (right)

Below: The refinery's cyanide pools



With allotment waiting lists more than a decade long in many areas, people without gardens are becoming increasingly creative in their enthusiastic quest to grow their own food. Report by **Giovanna Dunmall**

A hand holding a carrot with green leaves against a blue sky background. The carrot is orange and has some soil on it. The hand is light-skinned and is holding the carrot from the bottom. The background is a clear blue sky with some light clouds. The carrot is the central focus of the image.

# How to... create your own edible landscape

## Food not lawns

The urban food-growing network Food Up Front (which currently operates in several South London boroughs) focuses on unused spaces that people tend to overlook, such as balconies, roof spaces and even windowsills and doorsteps. It particularly encourages members to use their front gardens, as it believes these are 'dead spaces' that are often paved over. This reduction in vegetation contributes to the heat island effect and increases stormwater run-off. Growing food in your front garden makes it possible to strike up conversations with your neighbours, argues Food Up Front, and easier to ask them to water your crops while you're away (without the need for giving them a key).

Members pay a modest annual fee and in return are given a starter kit, advice (by email, phone or in person), seeds and the constant support of a local street rep. Don't worry if you aren't a green-fingered savant: about half of new members have never even grown a carrot before. Soon, however, they are eating their own salad, herbs, tomatoes, peppers, courgettes, aubergines, beans and cucumbers, say the network's founders; all crops that are fairly easy to grow in limited space. Some have even grown potatoes and spinach on their balconies.

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

## Sharing land and gardens

Sharing land is a simple but radical idea. It not only increases the opportunities to grow food locally, but also creates community spirit, encourages chemical-free gardening and discourages antisocial behaviour such as fly-tipping. In the long-term it can help us towards a lifestyle that is independent from oil.

The Adopt-A-Garden scheme was launched on the Isle of Wight in February 2008 and brings together people who own gardens they can no longer tend to (there are more than 3,000 on the island) with people looking for a space to grow food. Householders get their garden looked after for free and gardeners get a free allotment in return. Apart from reducing food miles, the scheme may have additional

## More urban food-growing schemes and useful links

### Capital Growth

An ambitious grow-your-own scheme that aims to turn 2,012 unused patches of London land into plots for cultivating food in time for the 2012 Olympics. The website gets you started on how to find food-growing space in your area, how to get involved if you already have a food-growing space and other ways to volunteer. The website also includes a resources page with contact information for businesses and organisations supplying materials for food-growing projects.

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

### Growing Real Organic Food in Urban Neighbourhoods in Bristol

GROFUN's members turn local gardens into growing spaces by providing labour, expertise and tools. In exchange for having several volunteers at once work on your garden you take part in 'action days', providing labour in other people's gardens or helping out with other useful gardening jobs. When harvested, produce grown in this

way is shared equally between garden owners and volunteers. In the long term, the group wants to set up a local urban-grown vegetable box scheme.

[www.grofun.org.uk](http://www.grofun.org.uk)

### Incredible Edible Todmorden

A project that aims to increase the amount of local food grown and eaten in the deprived West Yorkshire town of Todmorden. Businesses, schools, farmers and the community are all involved, and are transforming public flowerbeds into community herb gardens and vegetable patches. The produce is sold in local cafés and markets, and loyalty cards help fund the work. The town's aim is to be self-sufficient in vegetables by 2018.

[www.incredible-edible-todmorden.co.uk](http://www.incredible-edible-todmorden.co.uk)

### Project Dirt

An online community where people with environmental projects can interact. Trialling in south London but open to all.

[www.projectdirt.com](http://www.projectdirt.com)

social benefits, says Ray Harrington-Vail of local environmental charity The Footprint Trust, which is co-ordinating the scheme.

[www.footprint-trust.co.uk/adoptgarden.html](http://www.footprint-trust.co.uk/adoptgarden.html)

A similar scheme was launched in the south Devon town of Totnes (also a Transition Town) in January 2008. The Garden Share project matches keen growers who don't have a garden with those who have garden space they would like to share. 'Keen growers' means anything from couples, retired people or busy single mothers with no garden to students and groups of friends, explains Garden Share co-ordinator Lou Brown. The scheme has had 100 per cent positive feedback, says Brown, in part, she believes, because of the fact that she interviews and keeps a close eye on pairs (at least at first). This ensures that people who are not totally committed (gardeners have to work their piece of land three times a week at least in summer) or just looking for a free garden labourer, are put off. 'By having a third party formalising the arrangement

people start out with matching expectations and realistic boundaries for both parties." All 24 gardening agreements are going ahead this year and new members are looking to join.

[www.totnes.transitionnetwork.org/gardenshare/home](http://www.totnes.transitionnetwork.org/gardenshare/home)

Another land-sharing venture is in the process of being set up by Hugh Fearnley-Whittingstall, organic farmer, chef and TV personality extraordinaire. 'Landshare' aims to put people all over the UK who have unused gardens in touch with gardeners looking for space. For the moment, people are simply registering their interest as a grower, a landowner, a land-spotter or a facilitator (a volunteer willing to support elderly land-sharers, or others who may require help). Once the initiative is up and running – in time for spring planting, say organisers – these people will be put in touch with each other. So far more than 20,000 people have registered.

[www.landshare.net](http://www.landshare.net)

Giovanna Dunmall is a freelance journalist

# Cooking for allergy sufferers

A child's food allergies can be terrifying in the first instance, but they shouldn't mean being sentenced to a lifetime of unexciting food. **Matilda Lee** offers suggestions for a healthy, tasty, non-allergenic diet

**W**hen my son Dimitri was just over six months old, I fed him a cow's-milk-based formula for the first time. Immediately, his entire body turned bright red. Heart racing, and panic setting in, I tried keeping my cool while phoning the midwife. He wasn't coughing, his breathing was fine, and a description of his symptoms led her to conclude that he had an allergic reaction to cow's milk. My husband and I consider ourselves lucky: many with food allergies have life-threatening reactions; our son got off with (albeit quite severe) red, itchy eczema.

Almost four years later I can look back at that incident and see just how little I knew and how far I've come in handling my son's many food allergies. Unfortunately, it is not confined to cow's milk. Over the next year we found out, painfully slowly, that his allergies extended to all dairy, eggs, multiple fish, including most shellfish, peanuts, sesame and other seeds, and many legumes. So what does he eat? The answer is lots.

One of the first things to realise is that when it comes to food allergies, you have to read every label of every food to be eaten. Plain tea biscuits that contain skimmed milk, pasta that contains eggs, sauces with a bit of hidden cheese – these are just some of the items that mean you must never take anything as a given. In restaurants, bakeries and other places that serve food we have learned to be very vocal, constantly asking if such-and-such a dish contains any dairy or egg products. If the staff or chef can't answer, just don't order it.

The best way to deal with food allergies is

not to eat food with labels; instead cook from scratch using fresh, seasonal ingredients. Having had to put a magnifying glass up to anything my son eats has taught me a lot about food in general, and I have to say that, from my many hours in the kitchen, our family as a whole has become much more healthy.

That's not to say cooking for food allergies itself is easy, as I am on a constant mission to ensure my son gets enough calcium, vitamin D, protein and all the other challenges that a dairy- and egg-free diet throws up.

A book that helped out a lot when I was just starting out is the *Food Allergy Survival Guide:*

*Delicious recipes and complete nutrition* by Vesanto Melina, Jo Stepaniak and Dina Aronson (Book Publishing Company, £14.99). It goes into great detail about what food sensitivities are, includes nutrition-planning and lots of recipes for 'normal' things children like, such as banana bread and pumpkin spice bread, without using dairy and egg products.

Next up was discovering Lucinda Bruce-Gardyne's *How to Cook for Food Allergies: A step-by-step guide to preparing delicious food, simply, from scratch* (Rodale, £12.99). It includes a chapter on 'Eating a balanced diet on a restricted diet', and has lots and lots of great recipes. I have Lucinda to thank for introducing my son to dairy-free lasagna. Yes, it does take a good full morning to make – including the dairy-free béchamel sauce – but my son gobbles it up. Lucinda is a professional chef whose three sons between them cannot eat dairy, eggs, gluten or potato, leading led her to experiment with a range of dishes that she then tried out on her husband and sons.

## Our daily read (dairy-free)

Another source of inspiration for creating meals without using dairy and eggs are vegan cookbooks. I hope I don't offend anyone by using the term 'meat-eating vegan', as that aptly describes the dietary restrictions on my son. Again – without offending anyone, I hope – a great way to add some protein to vegan recipes is by adding chicken or meat. Great books include *Vegan with a Vengeance: Over 150 delicious, cheap, animal-free recipes* (£9.99) by Isa Chandra Moskowitz, a quirkily irreverent book that aims to 'wean you from the corporate teat while at the same time saving you money and encouraging you to

## Useful resources

### Goodness Direct

A treasure trove of foods and cooking ingredients for allergy sufferers. Special dietary choices range from gluten-free, dairy-free, egg-free, yeast-free, wheat-free, vegan, vegetarian and more.  
[www.goodnessdirect.co.uk](http://www.goodnessdirect.co.uk)

### Floradix

German company that produces a broad range of natural vitamin and mineral supplements.

Available from Goodness Direct

### The Healthy House

Provides products for allergies of all kinds, including laundry balls, non-toxic paint, cosmetics and cleaning products.  
[www.healthy-house.co.uk](http://www.healthy-house.co.uk)

### Allergy UK

UK medical charity that deals with allergies. Its website contains information and allergy factsheets.  
[www.allergyuk.org](http://www.allergyuk.org)



**Left: Matilda Lee with son Dimitri, then aged three, and six-month-old daughter Elena**

**Below: Dimitri tucking into bread and olive oil 'butter', a small part of his healthy and varied diet**



MAIN PHOTOGRAPH: TERI PENGILLEY

support local growers'. Our favourites include roasted butternut squash soup, carrot-raisin muffins, and courgettes stuffed with olive, tomato and millet. There is also *How it all Vegan! Irresistible recipes for an animal-free diet* (£9.99) by Tanya Barnard and Sarah Kramer, and *Vegetable Heaven: Sensational seasonal vegetarian recipes* (£12.99) by Catherine Mason. All of these, as well as the excellent *Everyday Dairy-Free Cookbook* (£12.99) by Miller Rogers and Emily White, are published by Grub Street Publishers ([www.grubstreet.co.uk](http://www.grubstreet.co.uk)), founded in 1992 by Anne Dolamore and John Davies, who make a point of publishing books that address allergies and children's diets.

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

### Handy ingredients...

**Calcium:** curly kale, okra, spring greens, watercress, parsley, red kidney beans, figs, apricots. Try Rice Dream's rice milk with added calcium, oat milk or almond milk.

**Grains:** include amaranth, brown rice, cornmeal, oatmeal, quinoa.

**Omega-3:** provides relief for eczema or other skin conditions, and a good general dietary supplement; ground flaxseeds and flaxseed, hempseed or canola oil.

**Binding or raising agents** (to use in place of eggs): alternatives include apple purée, mashed banana and a mixture of arrowroot powder and tapioca blended with wheat flour.



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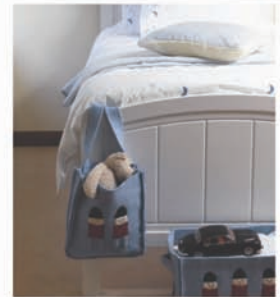
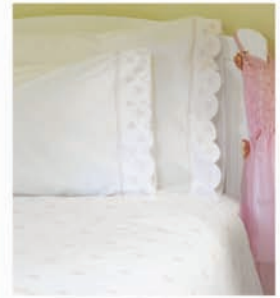


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deliveries to reduce fuel.

- The entire Easter range is packed in 100% recyclable packaging, with no big boxes shipped over from China. All printing is carried out in the UK using vegetable-based inks and the gloss coat is a water-based varnish (without these efforts cardboard

is not recyclable). The cartons are made from sustainable box board certified by the Forestry Stewardship Council. The ribbon is not recyclable, but it's pretty enough to use again and again!

View the Easter collection at [www.montezumas.co.uk](http://www.montezumas.co.uk)

**HOW TO ORDER:** To take advantage of free P&P (worth £5) on any order up to 8 April 2009, call 0845 450 6306 or order online at [www.montezumas.co.uk](http://www.montezumas.co.uk) quoting code 'ECOLog'. Offer ends: 09/04/09.

## Food & Drink

The producers on the following pages supply genuinely fresh, seasonal fruit, vegetables, fish and meat. And in most cases you can order online and have everything delivered direct to your door. You can also feel safe in the knowledge that you're buying environmentally sound, delicious food that supports small, independent producers

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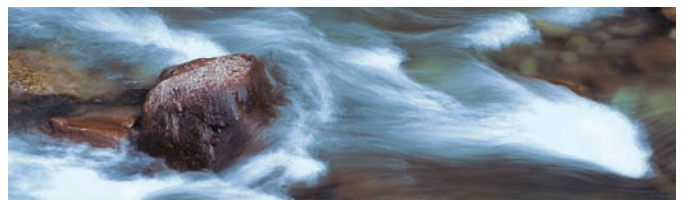
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## Coached in transport

It was interesting to read your 'Going nowhere?' feature last month, especially with regard to buses ('On the buses', March). Here's a rural perspective:

I live on Skye, own a car but, starting some two years ago, bus it as much as I can when leaving the island. I regularly travel to Dunblane (176 miles). This involves two buses and one driver-change stop, when you have to leave the bus for up to an hour for security reasons. Waiting adds approximately 30 per cent to my actual travelling time. When politicians highlight improvement needs, this fundamental flaw is never mentioned – nor is the need for bums on seats! It's not uncommon for passengers to be in single figures.

These waiting times could be greatly reduced through the Government making it a fuel subsidy condition (without which such buses couldn't economically run). Also, as George Monbiot points out in *Heat*, buses should be more comfortable and serve refreshments, so you would feel king or queen of the road, rather than a second-class citizen.

Faced with near-empty buses, however, I am becoming increasingly conscious of my often large share of below 10 miles per gallon. I have therefore looked into an electric car alternative, home renewable-energy-charged.

You don't mention that you can avoid much embodied energy by converting (a wide range of models). It's also much cheaper. As you point out, however, electric cars are urban-focused, with 50-100 miles maximum charge, so I can't get to common destinations – let alone back. Significant range improvements are apparently only a few years away, but I will need to bus it for some time yet.

**Alan Drever**  
Isle of Skye

## To hope or not?

The feature 'Abandon hope' (March) raises some interesting issues. Not least is the fact that conservationists and environmentalists generally choose never to discuss certain scenarios of the future.

Back in 1975, when Robert Allen [one of the original architects of the *Ecologist's A Blueprint for Survival*] was putting together the first draft of the World Conservation Strategy, I actually suggested that the strategy of doing nothing should be considered seriously.

Having just returned from East Africa, where the population of many countries has

## LETTER OF THE MONTH

# Driving blind

Your reports on the theme of 'The car is dead' ('Going nowhere?', March) took a very narrow view of the environmental impact of these machines. Like many environmental campaigners you seem to believe that as long as a CO<sub>2</sub> can be minimised or even removed, cars would be okay. Your obsession with CO<sub>2</sub> blinds you to the much wider environmental impact of cars.

Heaven help us if science finds a viable alternative to oil to power cars, whether it be coal- or nuclear-generated electric, or even hydrogen, sheep's urine or fresh air. Such an alternative would be a disaster for humankind.

We have 26 million cars in the UK and this number has been growing exponentially for 60 years. On average 2,000 new vehicles come on to our roads every day. Imagine if we had a new 'green' fuel without the guilt of carbon emissions? Our communities and streets would be even more gridlocked with these antisocial contraptions driven by joyous environmentalists. The use of cars isolates us from each other and from our world; it destroys our communities and our social interaction. Cars maim and kill; their manufacture depletes natural resources; they cover our countryside with tarmac;

pretty well doubled since the 1970s, it is difficult not to be depressed and have a sense of foreboding. With a large proportion of the population under 20 years old, and a very large percentage living in poverty, it seems to me inevitable that major catastrophes of famine, war and pestilence are going to occur. It is not so much a case of if, but when.

Fiddling around the edges by pouring in minute amounts of aid (much of which fuels corruption anyway) is simply delaying the catastrophe, and indeed, probably exacerbating it when it does come. With the world's population increasing by around 1.5 million a week, it is inevitable that something such as a mutant bird flu will one day run rampant. An epidemic on anything like the scale of previous pandemics will have catastrophic impacts on an almost unimaginable scale. The disposal of corpses,



they cause us to be obese and lacking in the strength, stamina or inclination to carry out the most basic of physical tasks.

Removing oil from all of this may reduce carbon emissions, but the replacement of oil in cars will only compound our calamity. The car per se is the problem; the form of fuel is largely irrelevant. It is time to address these wider environmental and social issues connected to the car.

**William Methven**  
by email

the breakdown of infrastructure – which could even include the collapse of the internet – will cause social unrest and upheaval that will affect everyone. In my view, everyone is far too optimistic about the future, with almost no justification.

The doom and gloom merchants of the 1960s and 1970s were not wrong, they just got the time frame wrong, and by doing so it probably means the disaster, when it occurs, will be far worse.

**John A Burton**  
by email

## The irrelevant market

Your report 'The good market' (March) seems bizarrely timed, to say the least. Its publication comes hot on the heels of the worldwide collapse of the free market

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banking system, overlaid upon man-made climate change (which Nicholas Stern himself called 'the worst market failure in history').

The examples you give are in some cases also extremely unconvincing. For instance, it is utterly misleading to talk about the wonderful 'Airplot' (to which I am one of more than 37,000 signatories) as a 'market' mechanism for protecting the environment, because, as you quote John Sauven saying, 'This is public activism. We will resist all attempts at compulsory purchase'. If Airplot were truly a market mechanism at work then all that would be needed would be for someone to come along and offer a high-enough price.

Saying we are not to be bought off is not to use the market but to jam the market, to refuse the market. It is such refusal that alone may at this point save our common future.

**Councillor Rupert Read**  
**Prospective Green Party MEP for the East of England**  
**Norwich**

## Saved by the Ecologist

Early in 2004 I began to notice a few odd things happening to me. I was 67 years old and had always had very good health, but soon I was feeling extremely exhausted at the least thing, became dizzy and disorientated, nauseous, began having headaches and found it difficult to walk without feeling wobbly

and weak. I started to drop things and fall down. I would have fits of crying and sudden temperament changes

We put it down to overwork and nervous exhaustion from running a busy guesthouse. In June of 2004 we decided to sell up, as I could not carry on.

After many tests the consultant said that I had polymyositis, a very rare disease of the immune system that only affects 10 in a million. I was told there was no cure and the only treatment was steroids; without them, I would eventually choke to death. One day, catching up on my reading, I came across an article by Pat Thomas in the



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## ECOLOGIST POLL

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**Q: Does being a politician make you a less effective campaigner for the environment?**

**67% Of you believe that green market initiatives really make a difference**

*Ecologist* (July/August 2006) which was all about fabric softeners.

The information was mind-blowing. It seemed to answer all the questions. And was it just my imagination or was I starting to feel a little better? I was in an idyllic environment, and by necessity was not using fabric softener or room perfumers.

Every day, when we had the hotel, I would wash the guests' towels and duvet covers, rinsing them in a quality fabric softener. I would then iron everything, all this in a small, enclosed utility room. We also had several plug-in room perfumers around the property. All my guests loved my beautifully clean and fresh hotel!

At my next appointment, the consultant told me the disease had mysteriously vanished. I am now fully convinced that we, the uninformed public, are just guinea pigs for greedy manufacturers making billions in profits. Until the Government bans all these dangerous chemicals that we are being exposed to, it is our own responsibility to be aware of what we breathe, eat, drink and put on our skin and hair. With computer technology we can research any product and then make our own choices – as I have done. I am now 71, in good health and a lot wiser, thanks to the *Ecologist*.

**Joan Woods**  
**by email**

## Cancel my subscription

I was given a six-month subscription to the *Ecologist* as a Christmas present, and although I have enjoyed reading some of the articles contained therein, I will not be renewing my subscription when the six months run out.

I consider myself reasonably ecologically minded: I recycle where I can, I use the car for necessary journeys only, I push my shopping trolley down to the shops, buy local and British products where possible, and I have a

bike. It's a long time since I went anywhere by air. I also have an allotment and grow a lot of my own fruit and vegetables – consuming them in season rather than buying out-of-season produce.

Since I have a degree in physics and chemistry, however, I find it insults my intelligence to be told repeatedly that our CO<sub>2</sub> emissions are the cause of global warming and climate change. We live on a dynamic planet encircling an even more dynamic and extremely powerful sun. Climate has changed cyclically throughout the Earth's history. Are we puny humans really capable of altering the carbon dioxide content of the atmosphere by changing our light bulbs and so on, when volcanoes are perpetually spilling out more CO<sub>2</sub> than we can imagine – even when they are 'dormant' and appear to be just gently 'smoking'?

Let me know when the *Ecologist* starts talking about the possibility of the cyclic nature of climate and stops blaming carbon dioxide, and I will come back on board!

**Sheila**  
**North Yorkshire**

## Green bottles

Regarding your *News* item, 'Giving kids a damn good snacking (February)', I would like to point out that telling kids not to reuse their empty drinks bottles is not, actually, a promotional stunt to get you to buy a new bottle every day. As someone who works for a toxicology risk assessment consultancy, I am all-too-aware of the risks associated with plastic bottle reuse and the extremely dangerous, not to mention carcinogenic, extractants that can contaminate the liquid after refilling.

This is where sports bottles come in handy because they are especially designed to be reused, whereas a mineral water bottle or a cola bottle is only designed and tested with a one-time use life cycle. You would be amazed how many more extractants can come out of organic materials given the right environment; particularly if reused and left in a hot car, for example.

**Imogen Sambrook**  
**by email**

*Pat Thomas replies: See this month's Daily Life section for eco-friendly, Bisphenol A- and phthalate-free sports water bottles.*

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**Now playing Fishy Business: the high cost of cheap farmed salmon**

# A nuclear conversion

Four green travellers have lost their way on the road to Damascus. Only renewables have the answers to our energy predicament, says **Jeremy Leggett**

**There are now two ways an environmentalist can get his face on the front page of a national newspaper, it seems. The first involves major criminal activity, and the second involves a Damascene 'conversion' in support of nuclear power.**

On 23 February, Chris Goodall, Mark Lynas, Stephen Tindale and Chris Smith took the second route. 'Nuclear power? Yes please...' read the banner headline, with the gloating subhead: 'Leading greens join forces in a major U-turn'. The article informed us that the quartet's conversion was down to the 'urgent' need to cut greenhouse gas emissions.

Urgent indeed is that need. The first in a long list of problems with their conversion is that 'urgent' and 'nuclear' are not words that sit comfortably close to each other. During 2008, captains of the nuclear industry acknowledged that they cannot build and bring on-stream the next generation of power plants in less than 10 years. That simply isn't fast enough to make a difference in serious efforts to combat our clear-and-present climate-change danger. In 2018, new plants eventually coming on-stream would be replacing a bare minority of the 429 nuclear reactors active in the world today, many of which are already near or past their supposed decommissioning dates as things stand.

The nuclear industry is also quite probably being over-optimistic, a trait in which it has specialised during its half-century history. The first European nuclear reactor to be given the go-ahead in 10 years was Finland's Olkiluoto 3, in 2002. This is a Generation III-plus European Pressurised Water Reactor (EPR), a modified and larger (in terms of output) version of the Generation III pressurised water reactors common throughout France.

The Finnish plant had been projected to complete in 2009 on a budget of €3.2 billion. Completion is now estimated not earlier than 2012, and the station is €2.2 billion over budget. This could increase as operator TVO seeks compensation against Areva, the vendor, for the delays.

Another Generation III-plus EPR reactor, at Flammanville in France – the first to be built in the country for 15 years – is also in trouble.

**Jeremy Leggett is founder-chairman of Solarcentury and SolarAid, and the author of *The Carbon War and Half Gone***



It is currently 20 per cent over budget. Meanwhile advocates of further French nuclear expansion await the results of a French government programme to test the groundwater under all 58 French nuclear reactors, after a recent spate of radiation leaks. Such setbacks may not be surprising. The nuclear industry has a major skills shortfall because of the long period it has spent in enforced abeyance since Three Mile Island and Chernobyl.

Even if it could make a major difference in greenhouse gas emissions reductions in the next two decades, the nuclear industry hasn't yet found a way to deal with its radioactive wastes, after decades of effort. Efforts by government to help it get round this inconvenient truth require hidden subsidies that would effectively be blank cheques extending far into the future. To commit to such subsidies would be to take vital resources from the genuine short-lead-time technologies.

There is only so much capital that can go towards energy, given all the other calls on governmental, corporate and household budgets, and within the energy budgets only so much can go to each energy technology. This is especially so in a recession. There

should be no mistaking the choices involved here. Channelling billions of dollars preferentially to nuclear removes billions from energy conservation, energy efficiency and

renewables. This unstated competition is why many nuclear supporters in and around Whitehall have tried for so long to hold renewable energy back.

Apart from the evidence of my own eyes – as a former member of the Government's Renewables Advisory Board – I have heard a

former Secretary of State for Trade and Industry say as much myself.

Then there is the proliferation problem. If we renuclearise in the West, what chance do we have of holding back aggressive nuclear programmes in states where enraged people dream of terrorist weapons far more terrifying than fuel-laden airliners? The Pakistani nuclear smuggling ring shows quite clearly what we can expect down that road. We greatly enhance the risk of losing cities to suitcase bombs.

The 'new Nuclear Four' are good people, with solid records as environmentalists. Though many people will find it difficult not to think of their conversion as betrayal, we can be sure it is rooted in genuine desperation about climate change. That being the case, I wonder how they would feel the day the first government memo is leaked showing that a renewables or energy services project is to be cancelled because the nuclear budget needs the cash?

What will be less easy to forgive will be any effort by the Nuclear Four to join the nuclear lobby's sniping at renewables and energy efficiency. Chris Goodall is already prone to this. In an op-ed in the *Independent*, he asserts, for example, that 'solar photovoltaic panels on residential houses will only ever make a tiny contribution to our overall energy supply'.

'Will' is a big word. The truth is that with maximal energy efficiency, solar photovoltaic panels (and tiles, and slates, and cladding...) can make a major contribution to our energy supply. I know this because I lived for more than a year in a house that generated more solar electricity than the householders consumed, with constant occupancy. The Government is beginning belatedly to appreciate the potential of photovoltaics, because its recent Low-Carbon Buildings consultation identifies energy-efficient photovoltaics as the cheapest technology combination for reaching the first step in its routemap to a target of zero carbon in all new homes by 2016.

Solar photovoltaics is just one member of the renewables family, of course. This family, broad and deep as it is in terms of potential, has been demonstrably suppressed and undermined for years now by the nuclear lobby. With the conversion of the Nuclear Four, it has now been undermined a little more.



**Renewables have been demonstrably suppressed and undermined for years now by the nuclear lobby**

This isn't a generational fad or a phase to grow out of, it's the simple truth: climate change is happening, and it's the 'adults' that need to grow up

# It's all about us

**'We're here because our parents' generation has failed us and it's now down to young people to stop climate change by whatever peaceful means we have left.'** Much more than just an off-the-cuff soundbite, this reported comment to the BBC from 21-year-old Plane Stupid activist Lily Kember after the occupation of the runway at

Stansted was really profound and really resonated. It touched on a theme I predict we'll come to hear a lot more about. I've lost count of the number of people who told me that hearing this quote on every news bulletin that day led to a bit of an 'epiphany moment', as they were forced to contemplate why the same young people that don't usually vote, and whom they usually dismiss as apathetic, were risking so much to go to such extraordinary lengths. Yet the media establishment, obsessed by the class and personalities of a handful of those involved, continues broadly to miss the significance of the new wave of youth activism it is witnessing and the important question of intergenerational justice.

The naive popular narrative that 'every generation has their thing', that climate is ours and that we are the 'Facebook generation' doesn't hold. A deeper analysis shows we're way beyond that. We're not simply rejecting coal and unsustainable aviation growth, but the delegitimised tools we've been handed to bring about change. We're not just using Facebook, but are forming a whole array of networks and cross-organisational links involving individuals in political parties, pressure groups, local community groups, social groups and mass movements with an international bent enabled by technology.

More importantly, while many have traditionally become campaigners with worries about what the world would look like for their children, much of that's changed; altruism has little to do with it any more. With the latest scientific reports showing that it will be our generation that will feel the severe impacts of warming, this is now about us. That simple fact leads to a different emotional reaction. It's not an option to set a standard that we don't expect to have to meet in a few years' time, when we've exited our 'radical phases' and entered into institutions to be corrupted as we 'grow up' and 'get less black and white'. The patronising clichés fall apart because this isn't about ideals so much as hard science. Every scientist in the world tells us things aren't going to get better, and [climate change secretary] Ed Miliband and his ilk should know that. We're not just going to go to rock concerts wearing green wristbands for the next 100 months. As a

**Joss Garman is an environmental campaigner and journalist**



friend of mine put it, 'There's now an entire generation plotting how to take over the system. And you only see the direct action because it's explicitly designed to be visible.'

An interesting byproduct of this new movement is the re-radicalisation of the 'old hands'. With hard-won

experience we're seeing many former activists coming back out of 'retirement' and helping to arm us with their expertise and support. This isn't generation versus generation – it's an intergenerational united front.

In the US, the youth movement in general is an increasingly powerful force that political elites are proactively courting. The mainstream consensus view is that Barack Obama would not be president of the United States if he hadn't made the 'youth vote' – notoriously 'unreliable' in the eyes of political apparatchiks – central to his electoral strategy. In the US, Democratic strategists have written books on the subject, and it was noticeable that with every speech he aimed at my generation the environment was a central theme. His team, many of them themselves young and energetic – his chief

speechwriter is 27 – recognised that only by rejecting the old labels, institutions and assumptions would they be able to reach into the campuses. By differentiating himself from Clinton with this age constituency, he reaped the

rewards on 4 November. Turnout from 18 to 30s doubled on 2004 figures, with votes going to Obama by a massive margin off the back of an enormous grassroots mobilisation by young people who spent evenings and weekends knocking on doors and sleeping on sofas in a decentralised campaign that they ran themselves.

It is completely inconceivable that this would happen for the Labour Party in Britain at the next general election, but for any British politician who wants a young, fresh and motivated team ahead of future elections, the lesson from Obama is that what they say and do now counts. This is interesting as younger Labour politicians begin to fight over who'll replace Brown. Professor James Hansen said that with Kingsnorth, Prime Minister Gordon Brown has the future of the world in his hands, and now he's passed that responsibility to Miliband, someone closer in age to our generation than his. Whose generation will Ed Miliband side with? He might like to bear that in mind as he ponders the Kingsnorth decision. Starvation, floods, mass migration and warfare over dwindling resources. In our lifetimes. We're not going to be forgiving.



**It's not an option to set a standard that we don't expect to have to meet when we've exited our 'radical phases'**

The creation of a new and neutral currency unit linked to the environment would stabilise the economy and reduce CO<sub>2</sub>

# The money shot

**There has been much trumpeting of the G20 meeting in London this month, where the leaders of the world's dominant economies will assemble to miraculously reverse the economic catastrophe facing the world. Brown's superhero cloak is looking tattered and tarnished, and the rubric for the meeting – 'growth, jobs, stability' – suggests that we are unlikely to see anything more exciting than a recycling of the same old globalisation mantras.**

Trade is not included in the top-three objectives, but you must have noticed the fearful reactions of the corporate globalisers to the clear indication that people across the world demand the right to control their own economies and protect their livelihoods. The claim that trade benefits everybody is repeated in catechistic fashion with little or no evidence quoted in support. A recent book called, rather neatly, *Making Poverty: A History* [by Thomas Lines, Zed Books] details the negative consequences for the world's poor of the 'free' trade system of the past 30 years or so. The implications for the global atmosphere of transporting goods unnecessarily are equally clear. So step one on the path to stability and security, for people and planet, would be localisation rather than globalisation, moving towards a world where countries aim for self-reliance rather than dominance through competition.

If trade was one of the pillars of the global economic architecture then money was the other. The present financial edifice was constructed way back in 1944 at the New Hampshire resort of Bretton Woods. The agreement reached there was designed to avoid the instability that had led to the 1929 crash, the depression of the 1930s and the war that followed it. We are risking allowing this frightful history to repeat itself unless the agenda for the G20 meeting is politicised and radicalised.

The basis of the Bretton Woods agreement was political

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management of the global economy. It had two major weaknesses. First, most of the world's countries were still 'owned' by colonial powers; their interests were not represented and their disastrous economic experience since then is the result. Second, the dollar was given supremacy in the world

economy, allowing the untrammelled imperialist expansion of the US over the past 65 years.

Ten years ago, Richard Douthwaite proposed the Ebcu – environment-backed currency unit – as a neutral international currency to replace the dollar. The currency would work in conjunction with the contraction and convergence model for limiting and then sharing fairly the right to produce carbon dioxide. Licences to produce CO<sub>2</sub> could only be traded in the new currency. We could argue for the Ebcu as a stabilising force in the global economy, a carbon rather than a gold standard, reflecting the importance in green economics of energy rather than money. The Ebcu proposal would allow the ecobuilders to take control of the global economy and include a solution to climate change as a structural component of the new economic paradigm. Without it, neo-Keynesian attempts to reinflate the sagging balloon will continue to force planetary limits as they have done in the past.

What the West needs most is to eliminate its unpayable debts; what the world needs is a solution to climate change. The Ebcu could encompass and satisfy these two needs. Putting 40 panicking men (and women?) with conflicting interests and different cultural baggage in a room together might not seem to be the best way of achieving a miracle. Once we put climate change on the table alongside the financial crisis, however, all the players have much to lose, and therefore also much to gain from a negotiated settlement.

## GOOD BUY WORLD

PETER RIGG



# Outfitting Africa

Dressing poorer countries in our designer cast-offs while we invest in shabby sweatshop chic? Invest in their infrastructure, not vêtements, argues **Joe Turner**

**For many years, those of us well-versed in fair trade and trade justice issues have been campaigning under a certain banner. We believed that years of handing out money had been ineffective, and that actually what we needed to do was to open our markets. 'Trade, not aid' was the buzz phrase.**

But maybe it is now time to stop and assess where we have actually got to.

The global fashion industry is a huge and complicated beast. In many ways it is destructive: millions toil daily in the fields, exposing themselves to high doses of pesticide; many more work in unholy conditions in factories that demand long hours and pay a pittance.

Freedom Clothing Project's new report, entitled 'Rethinking fashion as if people and the planet actually matter', argues that the global fashion industry is broken, and that we need some new thinking to create new systems that meet our clothing needs in a sustainable future.

Each year, the clothing that is sold in the UK (something like 3.6 per cent of everything produced globally) turns into around two million tonnes of waste. We do not now buy and treasure clothes; we buy and unthinkingly throw them away when they get boring.

This mountain of waste clothing becomes a huge disposal problem. Most of it is buried in landfill, but a significant proportion is sent abroad for poor people to wear. Which is why we often see people in desperate and tragic conditions on our TV screens wearing Nike t-shirts and other designer-branded clothes.

While we would argue that this is the most ethical part of the supply chain, we have seriously to ask ourselves what kind of people we are when we label others on our planet as only good for our handouts, justifying our disposable lifestyles by throwing our waste at the poor. If nothing else, our cheap waste clothing (and yes, these things are not free – even poor people have to pay something for our rubbish) destroys the market for local manufacturers and breed dependence.

Within our own country, the global fashion industry machine has caused many to live a shadowy, forgotten existence that nobody really cares about. There are people in our country who make clothing on a piece-rate (paid per completed garment), who work long hours and are regularly paid less than the

**Joe Turner is director of the Freedom Clothing Project ([www.freedomclothingproject.org](http://www.freedomclothingproject.org))**



minimum wage. It is not often that we hear about British clothing sweatshops because they are so hidden, but a recent BBC *Panorama* investigation showed examples of alleged exploitation at a British supplier of Primark. This is the tip of an horrific iceberg.

Many of us thought that the solution was to produce Fairtrade and/or organic products, but in an age of economic turbulence we surely need to ask ourselves whether we were justified in exposing the world's most vulnerable people to the vagaries of international trade. Cotton farmers receive a tiny fraction of the price of a finished garment. When a supermarket makes more profit than the farmer receives from a Fairtrade garment, should we not ask whether it would have been more beneficial just to give the farmer the money to grow something more sustainable or to create a more vibrant local market?

If a charity were to give away just 1p from each £1 it collected there would be uproar. So how have we got to the point where it is justified in the name of ethical fashion? Read the reports and look at the Fairtrade Foundation videos about the farmers and you realise something: these farmers are only slightly better off than they were before. They are still in dire poverty.

Yes, there have been real changes to their lives, but it is not enough. They still live in conditions we would find absolutely deplorable. This is before we even start worrying about every other pair of hands that the garment has gone through on its way from the field to our backs.

Maybe it is time we woke up and smelled the coffee. Despite our best efforts, the clothing industry does not work and cannot deliver the benefits to producers and workers that we all want to see. It is even hard to see a way for the organic or fairtrade sections of the industry to make real differences given the complexity of the problems.

Surely the most ethical option is not to join in with the prevailing orthodoxy, and to become inspired to turn our mountain of waste into a mountain of opportunity. Maybe we could all do with a course in how to use a sewing machine. Maybe we should all be buying clothes from specialist markets, such as farmers' markets, where we can meet the producer-makers who are making clothes in the UK. In fact, maybe the best way to honour those who have given their lives and environment for the sake of a t-shirt is to refuse to see it as a disposable item and to find something else to do with it once we become bored with wearing it, rather than simply importing even more. Maybe in turn



**If a charity were to give away just 1p from each £1 it collected there would be uproar. So how have we got to the point where it is justified in the name of ethical fashion? Farmers are still in absolute poverty**

we should be ploughing some of the wealth floating around in the rich North into projects that enable people in poorer countries to have stronger local economies and better to access local markets, rather than depending on being able to send products around the world.



# Investing in energy

The authors of the recent Climate Safety report make the case for harnessing the UK's renewable energy resource. By **Tim Helweg-Larsen** and **Tim Holmes**

At a time when economics has risen to the top of the agenda, it is worth stopping to pick up a dictionary and check what we think it means. It is in fact defined as 'the careful management of available resources'. This definition offers no reference to money, yet money and its pursuit have become synonymous with the idea of economics. I am sure few would have raised an eyebrow had I incorrectly stated the definition as 'the careful management of available money'. Money is the medium with which we facilitate the careful management – or otherwise – of our available resources.

Few things make the case for such careful management as urgently as the rapidly accelerating climate crisis. For Britain to make a meaningful contribution towards addressing climate change, its exit from fossil fuels will need to be rapid and complete. While our own emissions represent just two per cent of the global total, the message of our actions – that a nation can respond with urgency and clarity while, despite fears to the contrary, serving to bolster our economy – will be worth its weight in carbon.

Regardless of dictionary definitions, there is a clear economic advantage to the UK for switching to zero-carbon energy. Supplying the UK with the energy it needs will require much more than rooftop generation can provide; it will require a large offshore energy infrastructure, tapping the strength of our



winds and tides. A mobilisation of the scale and at the speed required to put this in place demands a concerted national effort, with both government co-ordination and strategic investment playing a major role. The up-front financial costs will be large, but at the same time will lay the basis for long-term resilience.

Yet putting this in the language of the Treasury – the kind of language the Government will take seriously – is surprisingly difficult. Today, nobody is able to calculate the financial value of Britain's offshore energy resource: if Denmark were to put in an offer to buy this great underutilised asset, we wouldn't know what price to put on it. Good data is available for its energy potential – which is clearly vast – and our relatively windy conditions make it cheaper for the UK to produce offshore wind power than many of our European neighbours. Crude estimates point to a financial value in the hundreds of billions of pounds – an offshore energy goldmine. More than almost anything else, this single number could add enormous power to the elbow of the minister for energy and climate change.

How do we get such a scheme up and running? The logical first step is to lay out a business plan, a blueprint for UK Plc, outlining the construction and operation of a renewable energy infrastructure, the income to be gained from energy sales to Europe, and calculating the total value of our resource. Such a plan would help the Treasury to explore the full economic benefit to the nation, including the costs we can avoid as fossil fuel prices skyrocket; the creation of hundreds of thousands of green-collar jobs, and the effect on our balance of payments.

While rebuilding our energy system will be expensive, the cost is also an opportunity to

invest in secure assets of enduring value. Britain is blessed with the largest offshore wind and marine energy assets of any country in Europe; developing this resource to supply energy domestically and for export means co-ordination and financing on a large scale. While the Department for Energy and Climate Change is the appropriate

body to co-ordinate such a programme, financing it is also an investment opportunity for individuals – whether directly over the post office counter or through the money in their pension funds.

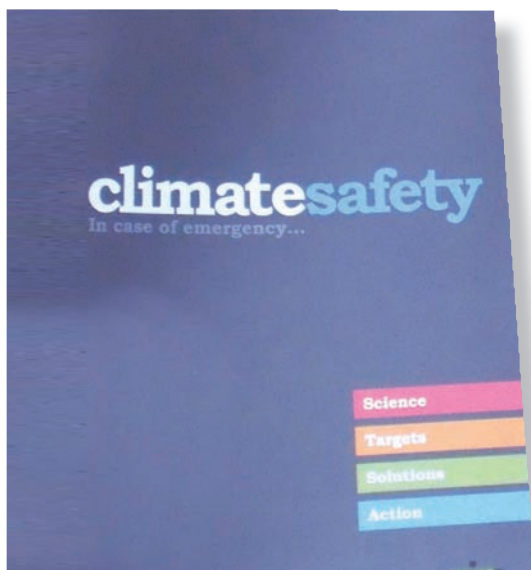
Both in wartime and in peacetime, large-scale infrastructure projects have been financed by government bonds, and post offices have provided customers with a face-to-face means of accessing them. Today, people hold £35 billion in premium bonds. Government energy bonds – issued by the Treasury and bought by investors – could similarly be used to finance a trust dedicated to investments in the UK's renewable energy, supporting new gridlines, wind farms, turbine factories and even energy efficiency drives.

Pension funds in particular would seem to provide a perfect match for such a scheme. Pension funds have long-term liabilities, having to pay their members at a later date, and will therefore be looking to balance this by investing in long-term assets. It is a real confidence boost for those paying into pension funds to know that the bonds in which they invest are backed by real assets – wind turbines, tidal or wave power – and that the quarterly dividends they receive are underpinned by a secure stream of income from the sale of energy. With the Government bringing in feed-in tariffs to guarantee the price of renewable energy sales, this income stream becomes very secure indeed.

Britain will never run out of wind, waves or tides. For every passing day of inaction, however, we must cover the increasing and avoidable cost of fossil fuel imports; we shall miss out on revenue from the export of zero-carbon energy, and the profound, cumulative risks of climate change will accelerate still further. Applying ourselves to economic policy in its true sense – the careful management of our available resources – provides a real route to securing our climate safety.



**Estimates of Britain's offshore energy resource point to a value of hundreds of billions**



Thirty-storey farms? The stated aim of the third green revolution to remove agriculture from the land is nothing short of colonial

# Up on the farm

**The thing is, I like urban farming. Rooftop gardens and window boxes excite me. Balconies filled with beans and tomatoes give me hope. Nonetheless, the 'next big thing' in urban horticulture has left me cold.** 'Vertical Farming' is a proposal to urbanise industrial agriculture en masse. The idea is to shift food production from rural

soils to city skyscrapers built as indoor factory farms. Would-be vertical farmers dream of high-rise, climate-controlled towers of steel, glass, lettuce and strawberries – new gardens of Babylon dubbed (without irony) 'farmscrapers'.

Yes, you read that right. Lifting agriculture off the land and into air-conditioned penthouses may sound daft, but then – lets face it – so did selling bottled water and carbon credits. This idea, championed largely by biologist Dickson Despommier of New York's Columbia University is gaining a rabid following, who argue that a growing population and dwindling land-base mean that old-fashioned 'horizontal' farming is no longer sustainable. Since 50 per cent of us have now migrated to cities, Despommier reasons that agriculture should follow us there. Doing so, he argues, will reduce food miles and maximise land efficiency. Indoor food-growing means no seasons, better pest control and produce that can be marketed as chic 'local' food. Despommier claims one 30-storey farmscraper the size of a city block could feed 50,000 hungry urbanites.

Perusing the architectural designs for farmscrapers posted at Despommier's website is to peer into a hi-tech world of soil-less farming. Fine mists of nutrients are robotically sprayed into hanging pockets of lettuce on conveyor belts, exposing leaves to timed quantities of sodium light. Water is recycled through stocked tanks of tilapia fish, while floors of broiler chickens provide compost and methane for energy. Despommier points out that the requisite technologies for growing above street level already exist thanks to commercial greenhouses and the space programme. Legions of furtive cannabis-growers can attest that cities have yielded hydroponic harvests for decades – though not exactly for nutritional purposes.

Despommier has been working with construction giant Arup to incorporate vertical farming into Dongtan, a new Chinese 'eco-city' near Shanghai. The cities of Incheon in South Korea and Masdar in Dubai are also early vertical farming contenders, along with Toronto, New York, Paris, Las Vegas, Vancouver, Portland, Seattle and Chicago. 'I can almost guarantee that within two years you'll be able to see one,' Despommier recently promised a Canadian newspaper.

**Jim Thomas is a research programme manager and writer with ETC group ([www.etcgroup.org](http://www.etcgroup.org))**



'We're in an exciting time... the third green revolution.'

And right there is the reason that vertical farming does not fit in the honourable tradition of window boxes and allotment activism. By invoking the green revolution Despommier is openly tying his ideological colours to his 30-storey mast. Remember the

first green revolution, when a package of hybrid seeds, pesticides and fertilisers destroyed soils and tied farmers to debt? The so-called second green revolution, patented genetic-based agriculture, is still playing out. (When asked who will develop the crop varieties for his high-rise revolution, Despommier reportedly suggested that Monsanto would be the ideal partner). Both 'green revolutions' deployed technologies that displace peasant agriculture and drive whole communities off the land. The farmscraper vision completes that cycle of landlessness perfectly – freeing up countryside for new colonial interests such as biofuel crops and



**Would-be vertical farmers dream of high-rise, climate-controlled towers of steel, glass, lettuce and strawberries – dubbed 'farmscrapers'**



carbon trading. Asked what would happen to farmers left on the land, Despommier told *Wired* magazine: 'We'll pay them to watch trees grow. Let's make them carbon farmers.'

It's not just northern farm livelihoods that Despommier is looking to scrape off the land. 'Let's take indoor farming to places where it is really needed,' he enthuses. 'Let's go to Darfur. Let's go to Mali. Let's go to Myanmar. They have no food, no water, nothing.' Really? That Despommier thinks Mali, a country often self-sufficient in food, with the third-largest river in Africa, has 'no food, no water, nothing' sounds an ominous warning. If one hi-tech visionary badly out of touch with the terra firma of southern agriculture wants to dream in his glass tower, who cares? What worries me are those who might put real power and money behind this warped farmscraping vision. They probably live in skyscrapers too.

# Citizen renaissance

Mass consumption is on the way out, but if we are to give up our selfish, acquisitive ways and improve wellbeing, it's going to be up to us all, says **Jules Peck**

Last month my friend Satish Kumar said in *Sustained* magazine that the happiest people are those who live close to the land and use their hands – craftspeople and farmers. As a naturalist, keen gardener and soon-to-be vegetable-plot devotee, this resonates with me. It also tallies with the evidence from wellbeing studies which show that people who live their lives framed around extrinsic values of self-focus, image, greed and acquisition, and are suffering from 'affluenza', are diminishing their own wellbeing as well as those around them. They also tend to have far higher environmental footprints than others. Conversely, those whose lives are focused on intrinsic values such as personal (not economic) growth, emotional intimacy and community involvement, have far higher levels of wellbeing and lower footprints.

It's more complex than saying they are 'happier', but they certainly experience far more 'flow' in work and play, better relationships and balance – things to which we could all aspire. The philosopher Aristotle had lots to say about wellbeing. In his view, to be a flourishing individual – one who experiences high levels of 'meaning' and wellbeing – you should aspire to be an active participant in the flourishing of community. So Thatcher had it all wrong: there really is such a thing as society, and it matters that we are active citizens striving for the good of the wider community, not just in an enlightened self-interest manner but in a deeper manner that respects the lives of all.

In [www.citizenrenaissance.com](http://www.citizenrenaissance.com), an online e-draft wiki book that I am currently writing with a friend, Robert Phillips, we call for a shift in societal values away from the consumer in us all to citizen values and advocacy for change. In short we are saying you are *not* what you buy. But it's hard to get that message heard amid the cacophony of background noise and brainprint of the advertising world.

These are things I take as self evident – but don't just listen to me: others have said it far more eloquently. Playwright Dennis Potter said in 1994 in *Seeing the Blossom*: 'The commercialisation of everything means

**Jules Peck is a freelance writer and citizen with 20 years' experience advising NGOs, government and the corporate world**



of course you're putting a commercial value on everything. And you turn yourself from a citizen into a consumer'. Booker Prize-winning novelist Ben Okri said in the *Times* in October 2008: 'The meltdown in the economy is a harsh metaphor of the meltdown of some of our value systems. Individualism has been raised almost to a religion, appearance made more important than substance. The only hope lies in a fundamental re-examination of the values that we have lived by in the past 30 years'.

Vaclav Havel has stated beautifully the fundamental shift that is needed: 'What could change the direction of today's civilization? It is my deep conviction that the only option is a change in the sphere of the spirit, in the sphere of human conscience. It's not enough to invent new machines, new regulations, new institutions. We must develop a new understanding of the true purpose of our existence on this Earth. Only by making such a fundamental shift will we be able to create new models of behaviour and a new set of values for the planet'. For Havel, our refreshingly outspoken bishops and many others, the environmental crisis is ultimately a crisis of the spirit.

One of my heroes, Aldo Leopold, the father of the land ethic, wrote to a friend that he doubted anything could be done about conservation 'without creating a new kind of people', and in the must-read *A Sand County Almanac*, from 1949, that 'a land ethic

changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it... it implies respect for his fellow-members, and also respect for the community as such'. And as Professor Tim Jackson says, 'the transition to a sustainable society cannot hope to proceed without the

emergence or re-emergence of some kinds of meaning structures that lie outside the consumer realm'. Brilliant thinkers such as Dr Tom Crompton at WWF are doing crucial work on these questions. We must urgently spread the conversation.

Right now there is a terrifying vacuum of values, vision and leadership in our political discourse and from our politicians. And it's hard for business to do the right thing when it's designed to make money and little else, and when the market is set up so perversely. Our politicians are (to borrow a phrase from the wonderful Thomas Homer-Dixon) like drunk drivers in the fog.

Harvard Professor John Quelch's 2008 study *Too Much Stuff* says: 'The mass consumption of the 1990s is fast fading in the rearview mirror. Now a growing number of people want to declutter their lives and invest in experiences rather than things'. And Jeremy Paxman has told us that we are witnessing the 'end of capitalism'. Our current form of corporate-consumer-capitalism has been shown to be what many of us knew it was: a fundamentally flawed system.

Luckily just the kind of citizen renaissance we need is beginning with groups like CRAGs and Transition Towns – described by Jeremy Leggett as 'scalable microcosms of hope'. And online digital democracy is giving individual citizens and collectives a new voice and real power in politics. Moveon.org, Getup.org, Dosomethingaboutit.org.uk, Localeyes.org and 38degrees.org.uk are names that if you have not heard of you soon will have.

What do I think all this citizen power needs to call for? Well, it's nothing short of a radical updating of our current operating system – no sticking plaster will do. We urgently need a Green New Deal to act as a transition phase to a steady state, economic development (not growth) paradigm that aims to maximise the wellbeing of people and planet, not the bank balances of the rich. And we must beware the snake-oil salespeople trying to flog us the dead-ends of green consumerism and cheat-neutral 'offsets'. Those are phoney solutions just as dangerous as what most of our current myopic flock of politicians would sell us.

Wake up, get angry (in a positive way), unite and become a citizen. It's our only hope. Oh, and take a look at my book I would love your feedback.



**We call for a shift in societal values away from the consumer in us all to citizen values**

# THE DIVIDED SELF

'Do you mind if I ask you a few questions...?'

Every day a new survey on people's attitudes to climate change emerges. And what do they tell us?

- 24 per cent of people in the UK do not believe that climate change is happening or are unwilling to adapt their lifestyles to reduce emissions, but 31 per cent of people are deeply committed to tackling climate change, finds the HSBC Climate Partnership.
- 63 per cent of UK consumers believe green issues to be important, says research company Gyro International, but around 50 per cent have no plans to make their homes more energy efficient, according to nPower.
- 91 per cent of Brits would consider installing solar panels if the Government set the right price

for selling electricity back to the grid, finds the Centre for Alternative Technology, but a YouGov poll in January found that more than half of UK adults were unconcerned by the decision to build a third runway at Heathrow.

These contrary findings suggest we are a nation of individuals who just don't know what to think or do any more. A nation with a divided sense of self.

Although market researchers love to divide us all into simple categories such as 'greens' and 'non-greens', the wildly differing figures above suggest that we are so much more complex than that. Is it possible that the transition to a warmer, poorer, less highly powered world is more difficult, in terms of technology and policy, but also in terms of shifting social norms and self-concepts, than can be adequately expressed, or explored, by filling out a simple questionnaire?

# After Frankenstein

In writing *Leviathan*, Thomas Hobbes created a monster: us. By reasserting our humanity we can correct the mistakes of the social scientists, says **Tom Hodgkinson**

**According to Thomas Hobbes in *Leviathan*, published in 1651, the central task of man was to avoid falling into what he called a 'state of nature'. Without man's ingenuity, hard work, self-interested business dealings and desire for self-preservation, a chaos and disorder awaited.** There would be: *no place for Industry; because the fruit thereof is uncertain: and consequently no Culture of the Earth; no Navigation, nor use of the commodities that may be imported by Sea; no commodious Building; no Instruments of moving, and removing such things as require much force; no Knowledge of the face of the Earth; no account of Time; no Arts; no Letters; no Society; and which is worst of all, continuall feare, and danger of violent death; And the life of man, solitary, poore, nasty, brutish, and short.*

*Leviathan* was written at a time when a new social system was emerging, one based on hard work and competition. The previous medieval system, which had taken Aristotle as its guide, had a more providential outlook, and saw humans as co-operative animals rather than competitive ones. Life was less about hard work, self-improvement and planning for the future, and more about contemplation, living in the moment, letting things take their course.

But the Hobbesian view clearly won out. It is the view that has led to the creation of our

current system or approach to things. You can see Thomas Hobbes in *Little House on the Prairie*. Through Herculean will and determination, Ma and Pa cross America, and build a house. They make a fireplace, they sow seeds, they put fences up and introduce the idea of property ownership, and they suffer all weathers. The American Indians, meanwhile, live lightly on the earth. They move around, they camp, they wear beautiful clothes. There is no concept of property.

The old Indian ways died out or were forcefully killed off by the settlers. Instead, 'commodious Buildings' such as the Twin Towers sprung up on US soil. Hobbes's idea was world peace, and we frantically pursued it at the cost, it might be said, of many deaths. Had any century before the 20th seen genocide on such a massive scale?

In the world of contemporary Californian futurology, epitomised by the hedge fund philosopher Peter Thiel, one of the three board members of Facebook and co-founder of PayPal, nature is a hostile force which man uses his ingenuity to overcome. Thiel commonly cites Hobbes as a philosophical inspiration. After all, the philosophy is flattering: it esteems man and his abilities very highly. In his own lectures, Thiel characterises the 'state of nature' as a time

when we would eat raw flesh with our bare hands. It is thanks to hard work and creativity that man is able to develop cooking and culture. A recent Hollywood articulation of this idea can be seen in the movie *Ratatouille*, where a humble rat becomes a great chef. Computers help in this battle against nature.

In *Brave New World*, Aldous Huxley almost satirically took this process, this Hobbesian plan, to its natural conclusion. In the *Brave New World*, the state of nature is something seen outside the city walls. Inside the *Brave New World*, the people are kept happy with endless sex and of course with *soma*, the drug that the citizens take when uncomfortable and messy reality – the state of nature – or passion—threaten to wreck the carefully constructed state of happiness.

*Brave New World* was published in 1932, and 10 years later Huxley was already seeing some his prophecies materialise: he cites, for example, that American divorce rates were on the rise. Now, even more elements of the *Brave New World* have come true: we have Prozac, ecstasy and Viagra; we work in air-conditioned offices; we have separated ourselves from nature; we go on mini-breaks; we use online dating agencies to find sexual partners; we are squeamish; we are huge consumers of transport.

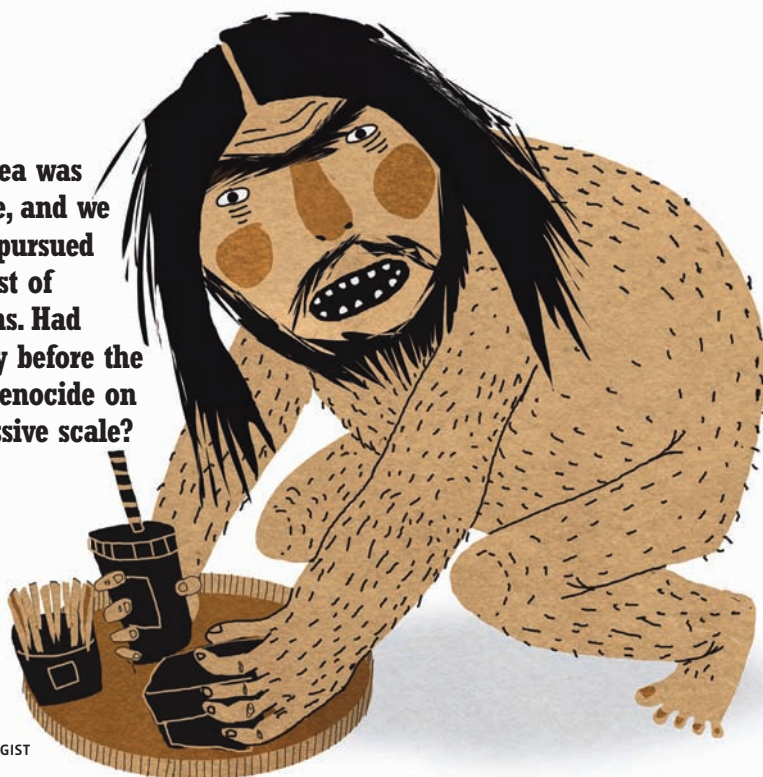
And more: we have become stupid. Hobbes's idea that the recreation of the world by man would lead to a flowering of culture, to world peace and to the end of fear, has simply not happened. Instead, his fears have been realised: we feel more lonely and afraid than ever. We are truly solitary, separated from each other by work and by machines; we are impoverished in the sense that there is not enough Shakespeare and Keats in our lives (banned in *Brave New World*); we are nasty to one another, certainly brutish, and while we may have extended life expectancy, the lives we lead are slavish and passionless. The economic system is clearly anything but stable.

Hobbes was wrong. The task now is to create a world where life is convivial, rich, kind, civilised and full. A step away from arrogance and towards humility and a reverence for nature would be a good start.

Tom Hodgkinson is the editor of *The Idler* and author of *How to be Free* (Hamish Hamilton, £14.99)



**Hobbes's idea was world peace, and we frantically pursued it at the cost of many deaths. Had any century before the 20th seen genocide on such a massive scale?**



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