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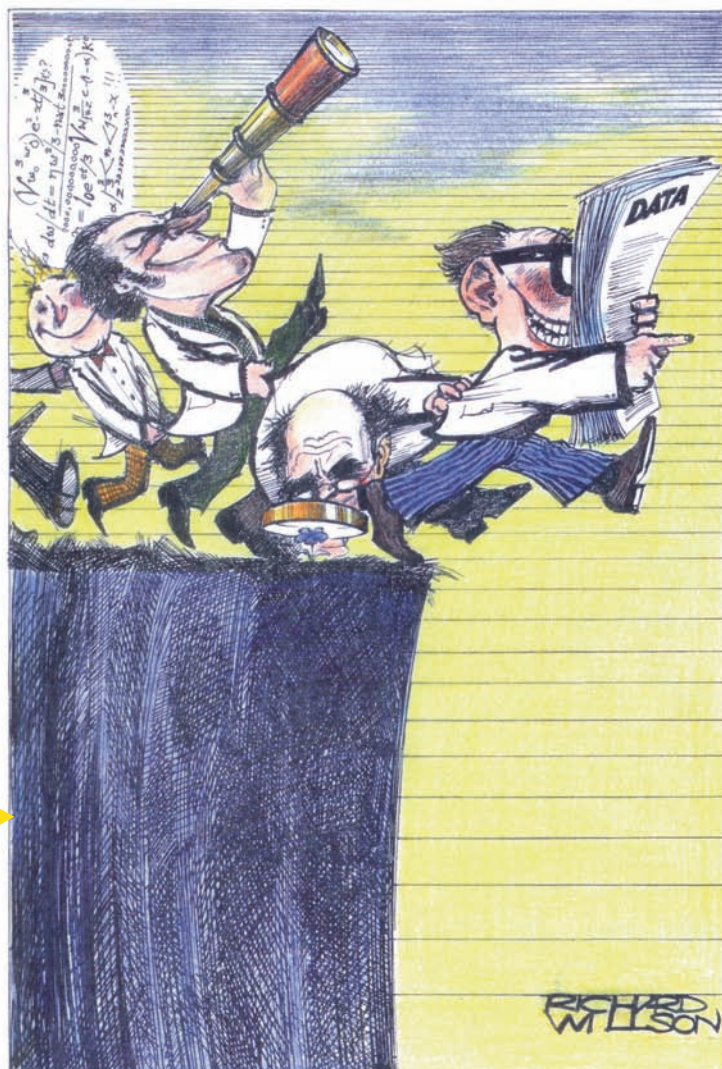
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The editorials are largely the work of *Ecologist* founder, Edward Goldsmith, whose warnings more than 30 years ago about climate change, oil shortages, antibiotic resistance and so on are more relevant today than when they first appeared. The cartoons are exclusively those of *The Times* newspaper's hugely talented Richard Willson, who despite illustrating some of the most depressing articles ever to have been published, nevertheless manages to find humour in them.

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## EDITORIAL



Last month, I wrote an article for *The Times* explaining why the *Ecologist* is supporting a group of senior NFU members in the formation of a new pressure group, Better NFU. Its aim is simple: to change the direction and leadership of the organisation, and in the NFU elections next year the group will field candidates for the three elected positions.

Not surprisingly, the NFU leadership reacted with alarm. Having initially declined to comment, the organisation's leader, Tim Bennett, later wrote in *The Times* that he takes 'great offence at claims that the NFU is not doing its job'. On the contrary, he said, the NFU has enjoyed 'many recent successes'.

That may be so. But farming is nevertheless a dying industry in Britain, with incomes plummeting and farmers being pushed out of business. And one of the biggest driving forces behind their demise is the increasing imbalance of power between supermarkets and their suppliers. More than two-thirds of food in Britain is now sold through just four supermarket chains, with Tesco taking the lion's share. Their power is hard to exaggerate, and as a result farmers have little choice but to accept what they are offered by the supermarket buyers. Farm-gate prices – the amount paid to farmers – have dramatically fallen for many products. In some instances, farmers are actually paid below the cost of production.

Supermarkets aren't the only cause of the collapse of farming in Britain, but they are a big part of it, and the NFU's reluctance to tackle them suggests – at best – that it hasn't the stomach to stand up for its members.

There are lots of possible reasons for that, not least so-called 'industry-capture'. But it's more than that. Implicit in much of what was said following the launch of the Better NFU campaign, both by NFU representatives and other commentators, is an assumption that farming is just like any other industry – that farmers should become internationally competitive, or simply go out of business.

Given that no one seriously expects Britain's farmers – with higher than average standards, more expensive land and labour – to remain internationally competitive, the logical conclusion of international competition is the end of farming in Britain. And the logical conclusion of that is the loss of the very people responsible for sculpting the countryside we love, the death of our rural communities and, much more importantly, total reliance on a fundamentally unreliable global food system.

It's been said time and time again that diverse, mixed farming represents the best, indeed the only true hedge a country has in times of catastrophic change. In light of the fact that the world's breadbaskets are dramatically shrinking, the world's urban population is rapidly growing, and the world's oil supplies are falling short of demand, it seems an obvious madness to bank our very survival on the hope that such change will never occur.

At the very least, it's not a gamble you would expect Britain's most powerful farming organisation to accept. Which is why we support the BNFU campaign and urge our readers to do likewise. For information about the campaign, visit [www.bnfu.org.uk](http://www.bnfu.org.uk)

A handwritten signature in blue ink that reads 'Zac Goldsmith'.

# Letters

## DEAR READERS

As some readers may know, David Cameron recently asked me to help oversee the Conservative Party's Quality of Life Policy Group. I believe it's a genuine attempt by a mainstream political party to come to terms with some of the biggest problems society faces. It recognises, at last, that issues like climate, health, the environment, energy, transport and so on cannot be addressed in isolation.

Our brief is therefore deliberately broad, covering everything from urban and rural housing to energy and energy efficiency, from fresh and sea water quality to food and farming. Its underlying premise is not just that climate change poses a dramatic threat to our existence but, more importantly, that policy makers must do whatever is required to combat it.

The Conservatives are now undertaking a fundamental (and long overdue) rethink of all their policies and the Quality of Life group provides an unprecedented opportunity to craft fresh, radical and

effective responses to the very problems that have preoccupied the *Ecologist* for many years.

The commission will necessarily rely on input from a wide range of key experts and organisations, many of which have never worked with the Conservative Party before. The fact that they are willing, even excited, to do so now is a reflection of the routine failures of the current government to address these issues, and also an acceptance that the Conservative Party is showing genuine determination to succeed where both it and others have failed in the past.

Having reached the conclusion that the best way for me to advance the *Ecologist's* agenda is to join a mainstream political party, I have chosen the Conservatives because their underlying philosophy is in harmony with many of my own convictions. That is my personal decision. It goes without saying that the *Ecologist* will always remain an independent magazine.

**Zac Goldsmith**  
Editor



Send letters for publication to: Letters, The Ecologist, Unit 18, Chelsea Wharf, 15 Lots Road, London SW10 0QJ. Email: [editorial@theecologist.org](mailto:editorial@theecologist.org). The Ecologist reserves the right to edit letters as necessary.

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## ORGANIC CHOCOLATE

As the founder of Green & Black's I thought your article (*Ecologist* Dec/Jan 2005) on the benefits of chocolate communicated a complex subject clearly and effectively. I'd just like to add a few points:

■ Mars' research into polyphenol content is incredibly simplistic. The company knows that when

you ferment cacao the simple phenolic compounds become complexed together into longer chain compounds. These don't hit the bloodstream as quickly as shorter chain compounds, so what Mars does is add unfermented cocoa beans to its 40g Dove Bar to get a blood test/laboratory result that shows an immediate benefit. However, there is nothing wrong with slower absorption

of antioxidants, it's just a lot harder to measure. With fermented beans the complex phenolic compounds are absorbed lower in the gut and are actually stored and then released into the system as and when they are required.

■ The case for growing cocoa on an ecologically sound basis is persuasive and the arguments in terms of biodiversity irrefutable. Just one or two mahogany trees planted per acre of cacao can provide more income over a 25-year period than all the income from the cacao – a nice bonus for the farmer.

The reason plantations don't work on a shade-grown basis is that shade trees take up space and the plantation system is based on a hierarchy of supervision. On a smallholder operation, the owner's family are all committed to making it work and pay and so there is no

supervisory management cost. It's win-win with organic – there's no exploitation, no chemicals, more biodiversity, better cocoa, and industrial plantations can't do it competitively.

**Craig Sams**  
President, Green & Black's  
Organic Chocolate

## STRIVING FOR PERFECTION

We are pleased that our products are considered to be 'significantly healthier than the mainstream products reviewed' (Letter to the *Ecologist*, Dec 2005), but would also agree that not all our products are perfect.

We do still use phenoxyethanol in some of our moisturisers as a preservative, although we have taken the decision not to formulate any new products with this ingredient, and are actively working on an alternative for those products that do contain it. We also use many natural plant extracts that are known to have antimicrobial activity, although unfortunately these ingredients alone rarely provide adequate protection for moisturisers.

Our Organic Tube Range of moisturisers uses only very minimal preservatives, but they rely on a specialised tube to keep the air out and only have a four-month use by period after opening. The Organic Tube Range contains some of the purist, most natural moisturisers on the market and was the first range of body care products to be certified organic by the Soil Association.

Our website [www.nealsyardremedies.com](http://www.nealsyardremedies.com) and our mail order catalogue list all the ingredients in each of our products so that customers

can make an informed decision about our products and ingredients before they purchase. We are very grateful to all our customers who take the trouble to write to us and raise the issues they are concerned about because that is how we learn and keep pushing back the boundaries of healthy product formulation.

**Susan Curtis**  
Director  
Neals Yard

## MOLECULE MANIPULATION

The article by Mark White (Medication nation, Dec/Jan issue) raised many important issues, one of which I would like to address. It is an unfortunate consequence of our reductionist education that many of my fellow scientists believe that it is possible to selectively 'target' specific molecules and genes and thereby effect cures and treatments of all our woes.

The fallacy of changing a specific gene without affecting other genes has been pointed out many times. Similarly, it is a fallacy to presume that we can affect the function of an individual cellular molecule without affecting other connected molecules and functions. We now understand that many of the proteins coded by genes are in fact signalling molecules, which interact with other molecules and genes as part of complex communication networks within the cell and between cells.

In fact many of the suggested targets for drug therapy, such as ghrelin (mentioned in the article), neurotransmitters, immune-mediators (cytokines), and hormones, act as multi-functional signalling



molecules. Consequently, if we knock out or interfere with one of these molecules, ghrelin for example to control obesity, we also run the risk of interfering with other functions of ghrelin, including all its interactive functions – hence the side effects that invariably accompany all such pharmaceutical manipulations.

Hundreds of years ago, medical practitioners in China and India recognised the risk of side effects from their crude prescriptions, and were often able to ameliorate them by judicious modifications to the prescriptions, often based on personal observations. Big Pharma today hopes that, by means of mass-produced expensive pure chemical drugs, they can target specific human diseases and behaviours without side effects. Experience has already illustrated the opposite, and ironically some of the same scientists who support this drug approach have been doing the research that has led to the concept of signalling pathways and networks. Of course, much of this research has been supported financially by Big Pharma.

As to the ethical issues raised, I personally would not want to try to alter my

own psyche or behaviour (though friends might claim that I could use some improvement!), since who knows what side effects could ensue.

**Dr. Jim Hudson**  
Canada

## CRYING WOLF

The re-introduction of the wolf into Scotland is a worthy vision to aim for, but we can't ignore the political and social steps required in between (*Ecologist*, Dec/Jan). For a start, wild deer numbers have reached unsustainable high levels, not because culling doesn't work, but because sporting estates have been unwilling to cull deer whose numbers artificially raise the cash value of the estate.

And Scotland is not Yellowstone and shifts in land ownership to communities are needed first so that they can start the regeneration of the land and find the right balance between farming, forestry, leisure and conservation – as has been achieved in Norway.

The wolf may at some point play a part in the Highlands of the future, but right now the re-introduction of the beaver is more relevant and achievable, albeit slightly less totemic.

**Mark Ruskell MSP**  
Scottish Green Party



## ENVIRONMENTAL POLLUTANT IGNORED FOR 40 YEARS

Scientists monitoring air quality around the US Great Lakes have detected significant quantities of a chlorinated organic chemical that has been on the market for more than 40 years.

Dechlorane Plus, manufactured by OxyChem, is a high-production volume (HPV) chemical (in excess of one million pounds of it are manufactured each year) used as a flame-retardant coating on electrical wires and cables and in computer connectors and plastic roofing material. Despite its long commercial history and the data indicating that it is persistent, bio-accumulative, and potentially toxic, this is the first report of its presence in the air and in wildlife.

The fact that Dechlorane Plus has kept a low profile for so long is shocking but not surprising. Lack of funding and non-existent US government support for identifying the toxic effect of chemicals in the environment means that each year scientists are currently measuring only a tiny percentage of the more than 100,000 chemicals currently floating around in the atmosphere.

“I’m not anti-Bush, I’m anti-Bush behaviour. In other words, I’m against cheating, greed, hypocrisy, cruelty, racism, imperialism, religious fundamentalism, treason and the seemingly limitless capacity for hypocrisy shown by Bush and his administration.”

Lord of the Rings actor, Viggo Mortensen, defends his criticism of George Bush as a ‘beast’.

## WHO'S WAKE UP CALL

A new report by the World Health Organization (WHO), *Ecosystems and Human Well-being: Health Synthesis* sends a wake-up call to healthcare professionals and politicians alike. It warns that the harmful consequences of ecosystem degradation – from climate change, to deforestation, to overfishing – are being reflected in declines in human health which will only get worse over the next 50 years, especially in sub-sahara Africa, central Asia and parts of Latin America, unless we act now.



## DEEP SEA FISH FACE EXTINCTION

Deep-sea fish are being taken to the brink of extinction because the dramatic collapse of shallow-water stocks is sending fishing trawlers further out to exploit deeper waters. Scientists writing in the journal *Nature* reviewed trawler logs for records of five deep sea by-catch species – the roundnose

grenadier, onion-eye grenadier, blue hake, spiny eel and spinytail skate. Each of these species is long-lived, has a lifespan of about 60 years or more, and takes 20 years or more to reach sexual maturity – features which make them vulnerable to extinction when fished commercially.

Numbers of all five fish have plummeted by 87-98 per cent over the last 17 years. At present their numbers are at such low levels that they qualify for the World Conservation Union's critically endangered list. If the decline continues at its current rate, these fish could become extinct over the next three generations.

Lead researcher Jennifer Devine noted: 'These are species no one really cares about, but they play a key role in the ecosystem. If nothing changes we could be facing barren oceans or oceans of fish we can't utilise.'

## REACH FAILS TO CONNECT

EU ministers rejected, in December 2005, a crucial principle adopted by the European Parliament in the REACH chemicals legislation: the requirement to substitute hazardous chemicals with safer alternatives whenever possible. Colin Butfield, head of the WWF-UK Chemicals and Health Campaign said: 'This failure has been driven by the German government's protectionist policy toward its chemicals industry, and though other governments lobbied hard in the last few weeks for genuine environmental concessions, these were sadly not achieved. We hope the damage can be undone before REACH becomes law.'

Although chemical producers would be required to 'assess' safer substitutes, regulators will still be able to authorise the production and use of toxic chemicals under an 'adequate control' procedure, even if safer alternatives are available.

This loophole represents little change from the current flawed system, and leaves the door open for carcinogens, reproductive toxins (eg the phthalate DEHP) and hormone-disrupting substances (eg bisphenol A) to stay on the market, even if safer alternatives exist.

The Council also voted to drastically reduce safety data that chemical producers would be obliged to supply, particularly for substances produced in low quantities. Thousands of chemicals could therefore stay on the market, despite no health information being available.

Butfield added: 'This is a tragedy and may have profound implications for the health of the people and wildlife of Europe – as well as costing the NHS, and thus the British taxpayer, a fortune in healthcare spending that could otherwise have been avoided.'



## COUNTING TIGERS

The world's largest census of the endangered tiger is underway in West Bengal's Sunderbans, a 10,000 sq km (3,900 sq mile) sparsely populated mangrove marshland on the eastern coast that is the world's largest natural tiger habitat. The hi-tech undertaking, which will use specially designed computer programmes, camera traps and radio-collars tracked by satellite, has been motivated by reports of continued and large-scale poaching in India's famed tiger sanctuaries.

## WHAT WE LEARNT LAST MONTH...

- **170 cotton growers from Western Vidarbha, India, who had opted to sow Bt cotton from US-based seeds company Monsanto, committed suicide during the period from June to December last year after suffering crop yields that were 10 times smaller than the yields promised by the company.**
- A three-year-old budgie was named Young Cross-Stitcher of the Year by *Cross Stitcher* magazine. Her owner said: 'One day I just sat and didn't stitch. It seemed to frustrate her. Then suddenly she picked up the needle in her beak and began cross-stitching herself.'
- **Archaeologists have discovered Romano-British farm buildings and a bathhouse from the third or fourth century while investigating mosaic tiles brought to the surface by a colony of Cotswold moles.**
- A woman from East London has married a dolphin in Eilat, Israel. She kissed Cindy the dolphin and whispered 'I love you' in his blow hole. The *Sun* reported that the woman said: 'Cindy is 35 and I've been visiting him on my holidays for 15 years. He's lovely.'
- **According to the Institute of Medicine, \$10 billion a year is spent marketing food to children.**
- So much rubbish was left behind by Hurricane Katrina that the US federal government has estimated that if stacked in three-foot cubes, it would go around the earth more than once.
- **French MPs have said 'Non' to non-biodegradable plastic carrier bags from 2010 onwards.**
- Phew, what a scorcher! Data from the World Meteorological Organisation shows that 2005 was the second warmest year on record. It was also the most stormy, with an unprecedented 26 'named' tropical storms that caused devastating losses across Central America, the Caribbean and the United States.
- **A 72-year-old interior designer from Vancouver pleaded guilty to poisoning several trees that border the city's historic Stanley Park to improve the view of the ocean from her condominium.**
- Our love affair with SUVs could be over. In 2005 sales fell to their lowest level since 1998.



## WOOD YOU BELIEVE IT?

Arsenic-based wood preservatives can leech out of treated wood and pollute groundwater for many years, according to a new study.

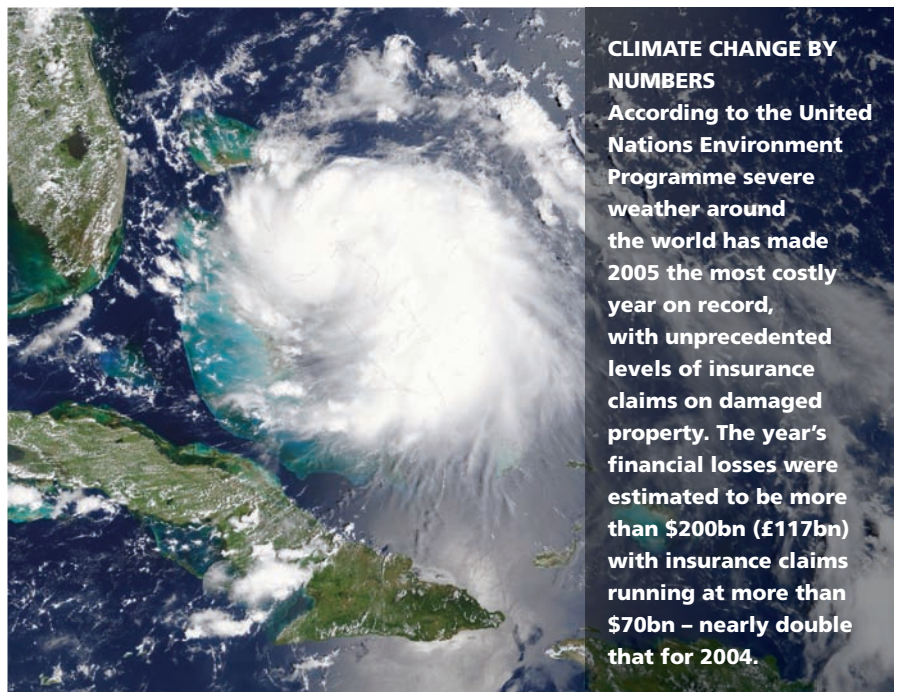
Chromated copper arsenate (CCA) has been used for years to protect hundreds of thousands of climbing frames, decks, docks, picnic tables and fences since the 1940s. In February 2002, the treated wood industry and the US Environmental Protection Agency (EPA) agreed to a two-year voluntary phase-out of most CCA-treated lumber products for residential use,

and arsenic-containing wood preservatives have been banned in the EU since June 2004. But a new study from the US indicates that leaching from products treated with these preservatives could contaminate soil and groundwater for decades.

Research in Florida looked at the runoff from CCA-treated decking and concluded that over its entire life – which varies from nine to 13 years – as much as 40 per cent of the arsenic in the wood will leach out.

When no longer in use, treated wood products often end up mixed in with other wood at construction and demolition debris recycling facilities, where the wood can be chipped into mulch that unsuspecting homeowners spread on their gardens.

In the US, CCA is still used for industrial applications such as railway ties and electricity and telephone poles. These have a typical lifespan of 40 years or more and studies indicate that arsenic leaching from these structures will continue to contaminate the environment for many decades.



### CLIMATE CHANGE BY NUMBERS

According to the United Nations Environment Programme severe weather around the world has made 2005 the most costly year on record, with unprecedented levels of insurance claims on damaged property. The year's financial losses were estimated to be more than \$200bn (£117bn) with insurance claims running at more than \$70bn – nearly double that for 2004.

**1**  
**BILLION**

pounds a year is spent on wasted energy by British firms who can't be bothered to lower the heating by one degree or turn off unused lights and computers.



**KILLER FACTS**

According to research carried out by the Norwegian Polar Institute (NPI), Norwegian killer whales, or Orcas, have now surpassed the polar bear as the most toxic mammals in the Arctic. They may even be the most contaminated groups of animals on the planet because they are so long lived and the Arctic – perceived by most people to be the epitome of pristine environments – is so severely polluted by hazardous man-made chemicals such as PCBs, pesticides and a brominated flame retardant.

“

The days of chucking waste into holes in the ground are over and the future is hi-tech, efficient, but fiendishly expensive. Instead of chucking 75 per cent of everything we have finished with down a hole for about £12 a tonne, within a few years very little will be landfilled and that will cost two or three times what it costs now. We expect it to cost Britain £5-8 billion to deliver an 80 per cent diversion from landfill. Everyone is in for a rude shock.’

Peter Jones is a director of Biffa, which collects the waste of more than 50 local authorities in the UK. By 2009, Mr Jones expects most counties will have only one landfill site, and that a new generation of large industrial composting and waste recovery plants costing several billion pounds will exist.

”



**COWBOYS AND INDIANS**

In Brazil, the displacement of indigenous tribes by mining and ranching companies took an alarming turn in mid-December 2005 when over 100 federal police were deployed to move 400 Guarani-Kaiowa Indians in Mato Grosso do Sul from their land. The 9,300 hectare area known as Nanderú Marangatú in south western Brazil was officially recognised as the land of the Guarani-Kaiowa in 2004, and this should have been the end of the story. However, ranchers are contesting the recognition in Brazil's supreme court.

Lack of space means many Guarani are building shelters on the roadside and starvation due to lack of land has become commonplace.

For more on their plight visit [www.survival-international.com](http://www.survival-international.com)



**DUMB FOOD**

Common food additives used in thousands of processed foods create a chemical cocktail that can harm young children's development, according to new research data.

In the past, additives such as Monosodium glutamate (E621), Aspartame (E951), Brilliant blue (E133), and Quinoline yellow (E104) have been linked to allergies and hyperactivity. But results of a three-year-long study by Professor Vyvyan Howard and colleagues at Liverpool University have shown that individually and together these additives have a powerful and damaging effect on nerve cell development, which could affect the forming brain, intelligence and development. Crucially the team found that when combined, the damage caused by the four additives studied was seven times greater than the sum of them individually. You are what you eat.

**5**  
**MILLION**

illnesses and 150,000 deaths each year due to global climate change, according an analysis of data from the World Health Organization.

## SPECIAL REPORT

# PARTY TO THE PLUNDER

A new report *Party to the Plunder*, compiled by the Environmental Justice Foundation (EJF), reveals the extent to which Illegal, Unreported and Unregulated (IUU) – or pirate fishing – in the waters of Guinea, West Africa is aided and abetted by lax regulations in the European Union.

## The background

IUU fishing occurs throughout the world and significantly accelerates the depletion of global fish stocks. According to the UN Food and Agriculture Organisation (FAO), 75 per cent of commercially important marine stocks are currently overfished, or are being fished at their biological limit.

The UK Department for International Development estimates that, for the years 2003-2005, the total annual value of IUU fishing worldwide is between US\$2.4bn and US\$9.5bn.

IUU fishermen commonly use banned fishing gear – such as driftnets – or fish in protected areas exacting a high toll on marine life. IUU fishing kills whales, dolphins, marine turtles, birds and countless fish species.

## What the report shows

Despite the attention that has been focused on illegal fishing by the international community in recent years, illegal fishing by foreign trawlers in Guinea's coastal zone is widespread and increasing. Guinea is losing more than 34,000 tonnes of fish every year, worth around US\$110 million, to illegal, mainly foreign fishing fleets. The illegal catch includes around 10,000 tonnes of 'discards' – the unwanted portion of the catch that is thrown overboard, usually dead or dying.

In the first six months of 2005, 19 fishing vessels (including EU state and Asian-owned vessels) were arrested off the coast of Guinea for a variety of offences, including fishing without a licence (poaching), fishing in the coastal zone reserved for artisanal (traditional) fishermen, and using illegal fishing gear.

Despite possessing the largest continental shelf area of Atlantic Africa (56,000 square kilometres) and a coastline of 320 kilometres,

Guinea relies on just five inshore patrol boats to protect its waters. Several of these are inactive due to a severe lack of funds.

## How can this go on?

IUU fishing off the coast of Guinea is aided by the widespread use of flags of convenience (FOCs) – when a vessel from one country flies the flag of another. FOCs make tracing and penalising the owners of illegal fishing vessels virtually impossible. For over half of those vessels arrested in Guinea this year there were no publicly available records that allowed the owners to be traced and fined.

Illegal fishing in Guinea is also aided by the use of ports of convenience, such as Las Palmas in the Canary Islands, that provide IUU fishermen with essential boat services – no questions asked – and a gateway through which illegally caught fish can enter onto the huge EU market.

According to the European Commission, Las Palmas has just four fisheries inspectors – totally inadequate to police fishing operations in such a large port. Once fish are landed in Las Palmas, it is extremely difficult to track them to their final destination.

If a vessel is caught engaging in IUU activities, the penalties are often too small to act as a deterrent. For example, in 2003 more than 10 per cent of vessels on the EU's fishing register (some 86,585 vessels) were fined for serious infringements of fisheries rules. However, EU vessel owners paid only €28.7 million in penalties – just 0.004 per cent of the value of fish landed at EU ports in 2002.

## The impact on Guinea

Surveys by both the Guinean authorities and the Fishery Committee for the Eastern Central Atlantic show that the majority of fish stocks in Guinean waters are either fully exploited or in danger of overexploitation. Guinea's annual commercial catch is estimated at 54,000 tonnes, added to which are a further 34,000 tonnes of IUU fish caught in the waters of Guinea, representing an additional 64 per cent over and above these legal recorded catches.

IUU fishing deprives 70,000 local fisherman in Guinea of their livelihoods.

## THE SOLUTION

The EU is a major market for Guinean fish and has an important role to play in ending IUU in Guinean waters. The EU must:



- 1** Insist on traceability from sea to marketplace, ensuring that fishing agreements promote sustainable and legal fisheries.
- 2** Close the loophole in international law that allows states to issue flags of convenience.

- 3** Press the Spanish Government and other European states to strictly enforce controls on Las Palmas and other ports of convenience.
- 4** Insist on traceability from sea to marketplace, ensuring that fishing agreements promote sustainable and legal fisheries.
- 5** Drastically increase fines imposed on EU vessel owners and ensure these are consistent from country to country. Currently, penalties vary hugely between member states with, for example, illegal fishing in Belgium incurring an average fine of just €375 as opposed to €19,255 in the UK.

**The full report can be downloaded at [www.ejfoundation.org](http://www.ejfoundation.org) or telephone +44 (0) 20 7359 0440.**

## ANIMAL WATCH 2006



## EU BANS ANTIBIOTIC GROWTH PROMOTERS

From January 1 the last four antibiotics permitted as animal feed additives – Monensin sodium, Salinomycin sodium, Avilamycin and Flavophospholipol – are no longer allowed to be marketed or used. The ban is the final step in phasing out antibiotics used for non-medicinal purposes.

‘We need to greatly reduce the non-essential use of antibiotics if we are to effectively address the problem of micro-organisms becoming resistant to treatments that we have relied on for years.’ said Markos Kyrianiou, EU Commissioner for Health and Consumer Protection. ‘This ban on antibiotics as growth promoters is of great importance, not only as part of the EU’s food safety strategy, but also when considering public health.’

Besides tackling antibiotic resistance in humans, the ban strikes at the heart of the intensive farming industry. To date, widespread antibiotic use has allowed farmers to manipulate the growth of their animals so that they reach marketable weight quickly and consistently. They are also added to feed to combat the diseases endemic to animals reared in cramped and unhygienic conditions.

However, while growth-promoting antibiotics can no longer be legally added to food, vets can still prescribe them as a prophylactic (to prevent disease in healthy animals), so farmers’ reaction to the ban is crucial. If the loophole allowing veterinary use of antibiotics is abused then the new regulations may not have gone far enough to remove the antibiotic habit that keeps farmers rearing animals in an unsustainable and inhumane way, and keeps risky drugs circulating in the human food chain.



### NEW CARNIVORE

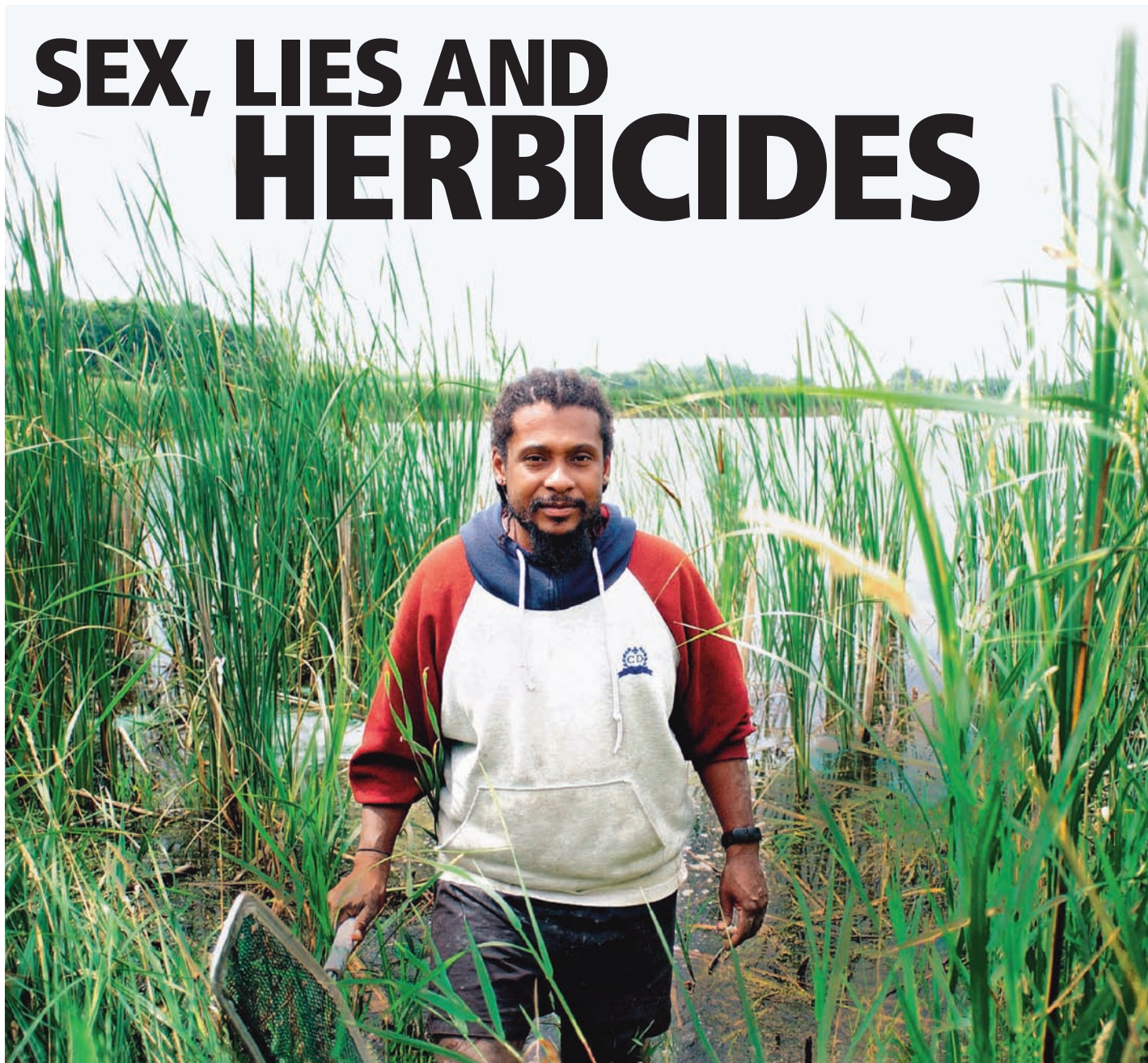
A catlike creature photographed by camera traps on Borneo Island is likely to be a new species of carnivore, the World Wildlife Fund reported. If confirmed, the animal, which has dark red fur and a long, bushy tail, would be first new species of carnivore discovered on the island since 1895, when the Borneo ferret-badger was found. Since 1994, researchers have found more than 360 new species on the island of Borneo, most of them insects and plants.



### THE AMERICAN PIKA

This small mammal related to the rabbit appears to be facing extinction in the Great Basin, new research has found. Pikas are sensitive to high temperatures, a characteristic that makes them an indicator species for global warming in the western United States, where they live high in the mountains. A University of Washington archaeologist says that climate change and human activities appear to be the primary factors jeopardising the pikas, pushing them upwards in their mountain habitat until they run out of places to live.

# SEX, LIES AND HERBICIDES



When Tyrone B Hayes, an expert in amphibian biology and a popular professor at the University of California at Berkley, was asked by Syngenta to look into one of the world's most commonly used herbicide, Atrazine, he was excited. Until he discovered what it was doing to his beloved frogs and us. **Pat Thomas** meets Syngenta's worst nightmare.

In 1997 Professor Tyrone B Hayes received an offer that would change his life. He was asked to examine the impact of atrazine, the most widely used herbicide in the US, on the hormonal systems of frogs. This invitation was made by environmental consulting firm Ecorisk on behalf of Syngenta, atrazine's manufacturer. At that time atrazine was one of five pesticides up for review and reapproval by the US Environmental Protection Agency (EPA) and Syngenta was keen to plug the holes in its existing research and thus help ensure atrazine's reapproval.

PHOTOGRAPH BY NATIONAL GEOGRAPHIC

Hayes, an expert in amphibian biology and a popular professor at the University of California at Berkeley, had already published 10 peer-reviewed papers on amphibian development. However, it was his field work in Africa studying the effects of hormone disruption in *Hyperolius argus*, a type of reed frog and his subsequent development of a screening test known as Hyperolius Argus Endocrine Screen (HAES) which can detect hormone disruption at low levels, that convinced the Syngenta-funded panel of researchers at Ecorisk that Hayes would be a valuable member of the team.

Syngenta was confident that atrazine, long believed to be non-toxic, would pass muster. Studies utilising large doses, which most animals would not encounter in the wild and which most humans would not be exposed to in their water supply, had been shown to have no effect on health or reproduction.

Hayes says he probably never would have begun looking at atrazine had Ecorisk not approached him. He knew very little about the herbicide at the time, but the work was prestigious and well funded and made perfect sense as a career move.

Research started in 1998 and by 1999, working with African clawed frogs that he had raised in his lab, Professor Hayes began testing the effects of various doses of atrazine on the animals' hormonal systems. Within months he was alarmed to find that doses of atrazine in concentrations as low as one part per billion were inhibiting the growth of the larynxes of male frogs. He readily shared his findings with colleagues on the Ecorisk panel and with Syngenta. The effects were noteworthy, since under EPA guidelines, atrazine is considered safe in drinking water as long as it is found in levels no greater than three parts per billion.

Ecorisk responded cautiously, suggesting that the findings required confirmation with additional research, but the company made no moves to provide funding for further research and by controlling the money, says Hayes, 'they had control over the pace of the work'. Frustrated by the delay, Hayes eventually did the additional analysis with his own funds and with the help of

students who happily volunteered their time to the project.

In 2000 a second series of studies, which looked not only at the larynxes but also at the sex organs of atrazine-treated frogs, showed that at levels as low as 0.1 parts per billion – one tenth the concentration of that affecting the larynxes – multiple non-functioning ovaries and testes appeared in the atrazine-treated male frogs. A closer look revealed that in these frogs the testes were producing eggs rather than sperm.

Atrazine triggers these changes by stimulating the activity of an enzyme called aromatase, which converts the male hormone testosterone into oestradiol, a form of estrogen and a female hormone. 'If this happens at the wrong time in young frogs' development,' says Hayes, 'you end up with animals that look fine on the outside, but when you start to examine more closely whether or not they are functioning, they're clearly not fine.'

Hayes kept the Ecorisk panel informed of his disturbing findings, and pressed for more research funding. But with funding still not forthcoming, late in 2000 he decided to quit the panel and complete the work on his own.

By now the penny was beginning to drop that Syngenta/Ecorisk were not interested in pursuing or publicising the bad news in Hayes' data. His resignation letter noted: 'It will appear to my colleagues that I have been part of a plan to bury important data... This fear will be particularly realized when independent laboratories begin to publish data similar to data that we (Novartis and my laboratory) produced together as early as 1999.'

Looking back Hayes recalls that after his field work in Africa and the subsequent development of the HAES test, a television reporter enquired whether the kind of results revealed by his screening test might one day make some big company shake in its boots. 'I told him that if a big company had a chemical

that was potentially harmful, I think they would be happy to get the data. That's how naïve I was.'

### In the beginning

Atrazine, manufactured by Syngenta (a subsidiary of pharmaceutical giant Novartis), was introduced into agriculture in 1958. It's most commonly used in the production of maize but is also used on sorghum, sugar cane, pineapples, chemical fallows, grassland, macadamia nuts, conifers and for industrial weed

control. It is a selective systemic herbicide, absorbed mainly through the plant's roots, that inhibits photosynthesis and interferes with enzymatic processes of the plant. Like many pesticides, atrazine is strongly

## A closer look revealed that in the African clawed frog the testes were producing eggs rather than sperm

persistent in the environment and can be found in significant quantities in rain, fog, surface, marine and ground water.

By the 1980s atrazine had been identified as a potential carcinogen associated with high rates of prostate cancer among workers at Syngenta manufacturing facilities. Because of this the company could hardly have been surprised at Hayes' data and yet the ferocity of its objections to Hayes' findings and refusal to even consider the data took the scientist by surprise.

According to Professor Hayes, the company sat on the data for a long time, failed to report it to the EPA and dragged its feet on funding new studies to confirm the results. For two years they maintained that the results were inconclusive and inconsistent with accepted beliefs about how toxic compounds behave. However Hayes, like many amphibian biologists, began nursing a growing concern that the documented and worldwide decline in frog populations might be a consequence of this low-level endocrine disruption.

In addition to burying his findings, Syngenta also tried to get him to change the way he assessed the results. 'For example,' says Hayes, 'with the voice box data they asked me to recalculate the data by dividing the size of the larynx by

the body weight. And my response was, why would I do that? For example, my daughter was four years old at the time and using that kind of calculation I was able to show that if I measure my calf muscle and divide by my bodyweight and do the same for my daughter I could make my daughter look bigger than me! You would just never do that in a study of this kind, and at that point I began to ask are these guys that dumb or that unethical? Of course, these guys aren't dumb. They're actually quite smart, some of them are smarter than I am. So you know that they know this is an inappropriate thing to do and the results would be misleading.'

When Hayes quit the Ecorisk panel in 2000 to pursue his experiments independently, the confidentiality agreement between Hayes and Ecorisk no longer applied. It was then, according to Hayes, that Ron Kendall, director of the Ecorisk panel, offered him \$2 million to do the studies 'in a private setting' – an offer which Hayes took to mean in a setting where Ecorisk and Syngenta could control the release of the data. Kendall denies that such an offer was ever made.

Hayes maintains that when he refused, the character assassination began. In this respect Hayes is Syngenta's worst nightmare – youthful, handsome and black, an articulate, fastidious scientist and a dedicated family man so there is little to pick apart. Nevertheless, further scientific papers published in 2002 attacked Hayes' work as difficult to interpret and unreproducible.

'I would read these criticisms of me or of my work and invariably it would be by a scientist in the pay of Syngenta.' At this point Hayes began to realise just how deep scientific conflicts of interest can go, especially when huge profits are at stake. 'For example,' he says, 'Ron Kendall was working for Syngenta and running Ecorisk while chairing a scientific advisory panel to the EPA. He was also editing the journal that published a paper

Hayes is Syngenta's worst nightmare - youthful, handsome, black, an articulate, fastidious scientist and a dedicated family man

challenging my findings, written by one of his colleagues at Texas Tech University, who was also under contract to Ecorisk.'

Hiring academic scientists and portraying them as an independent panel creates a veneer of scientific respectability, but a closer look at the papers showed a clear schism between the results of the corporate-funded data, which supported the safety of atrazine, and that of Hayes and other independent scientists which found evidence of harm.

But it wasn't just the conflicts of interest and questionable ethics of the scientists employed to discredit him. The science itself was poor. The more than a dozen studies funded by Ecorisk to discredit Hayes' findings were, he says, methodologically sloppy, often involving no control groups (that is, groups of unexposed frogs necessary for comparison purposes), and drew weak conclusions from data involving high death rates among test animals and contaminated samples. In one such study frogs were left in open tanks, able to hop freely between atrazine- and non-atrazine-containing containers. But the conclusion, that the study 'did not support Hayes' findings', was nevertheless reported to the EPA and in the press.

Remarkably Hayes remains largely pragmatic about the experience. 'To me the most important thing is to continue to be careful with my data because I know that there's always some body picking through every single line, every word, every statistic I publish. For instance, when I published a recent review in *Pesticide News*, the editors were concerned about the length of the references that were almost as long as the article. But I said no way am I putting myself out there without back-up. I like to be able to back up everything I say and yes, it's stressful, but in the end I think it also makes me a better scientist.'

A stress made more dynamic, no doubt, over the last 10 years by the

occasional film noir quality his life has taken on since challenging the might of Syngenta.

'After I published my initial data I had people from the Worldwide Fund for Nature (WWF) advising me that I should never go home the same way twice. When I testified for the Environmental Protection Agency (EPA), I had to have a federal officer pick me up and take me to my hotel. I was advised to stay in a different hotel each night and call him and let him know where I was each day. And all the time I was thinking *why?* It was sometimes like being in a movie, but I think I didn't feel it as much as the people around me did. I mean I had a threat management officer assigned to me on campus and one day the fire department contacted my wife to reassure her that any 911 calls from my lab or from home would get an immediate full response from the bomb squad or whatever. That was pretty strange.'

### Are frogs canaries?

The very public squabbles between Hayes and Syngenta were framed by the manufacturers as being little more than a simple academic disagreement. This had the effect of drawing attention away from the real significance of Hayes' findings and his growing concern that atrazine-induced hormone disruption was influential in the global decline of frog populations and may be implicated in human diseases as well.

The demasculinisation of frogs has many unhappy consequences for frog populations. With underdeveloped voice boxes the male frogs cannot call to prospective mates. With testicles full of oocytes (eggs) instead of sperm they cannot successfully mate. Without the right hormones released at the right time in their metamorphosis from tadpole to mature frog, the animals do not grow large enough or develop large enough mouths to eat their usual prey, and they do not know when to leave the pond and begin life as partly terrestrial beings. Drowning and starvation are common.

The question is, can we expect to see the same effects in humans? Syngenta argues that even if frogs are affected by atrazine in the way Hayes says, evidence of harm in frogs does not automatically

suggest that their herbicide is harmful to people, especially at the low levels being studied. Professor Hayes counters that whatever the outward differences between people and frogs, hormonally both species share significant similarities.

‘Male frogs sing and females don’t because testosterone makes their voice box grow. This is the exact same testosterone that makes the voice box and larynx grow in humans. Estrogen regulates their egg production and the reproduction. It’s the exact same estrogen that regulates a woman’s menstrual period and is involved in a woman’s breast growth. Thyroid hormone regulates the frog’s metamorphosis and development and it’s the exact same thyroid hormone that regulates our metabolism, that is in part responsible for obesity and that is necessary for brain development and normal growth in humans.

‘Stress hormones work the same way in frogs and people too. Our stress hormones can decrease human growth and cause trouble in pregnancy in the same way that stress hormones can decrease growth and immune function and cause trouble during a frog’s metamorphosis. All these types of hormones in frogs, the glands that make them are precisely the same as those that we see in humans.’

The potential toxicity of a substance can usually be measured by whether or not it causes harm in more than one species, and indeed the data show that atrazine’s toxic effects are not limited to frogs. It has been shown to feminise fish, amphibians and reptiles, birds and mammals. Available research shows that it inhibits immune function in carp. In mice, it reduces thymus weight and the normal cell count of the spleen. Atrazine significantly inhibits immune function in male rats exposed during fetal development and reduces the ability of human T and natural killer lymphocytes to destroy tumour cells.

Harmful effects in humans and linked to hormone disruption are already emerging.

Atrazine in well water, for example, is associated with a higher than normal risk of breast cancer among women. Also in the summer of 2001, the Natural Resources Defense Council (NRDC),

which had been prodding the EPA for some time to ban atrazine, learned that Syngenta had been tracking prostate cancer in its employees. Only after the NRDC alerted the EPA did Syngenta submit reports to the agency of numerous cancer cases among employees at its St Gabriel, Louisiana atrazine plant. The data, which has since been published in the *Journal of Occupational and Environmental Medicine*, found that Syngenta employees had rates of prostate cancer more than three-and-a-half times higher than the Louisiana statewide average.

Other human data shows that levels of atrazine in the urine of men living and working in some agricultural areas, and who are experiencing fertility problems, are equivalent to the levels that chemically castrate frogs. In 2004 epidemiologists from the University of Missouri found reproductive consequences in humans associated with atrazine, including sperm counts in men in farm communities that are 50 per cent below normal. Iowa scientists are finding

similar results in a current study.

### The cocktail effect

To date, the data amassed by Professor Hayes and his team at Berkeley has deeply challenged the accepted wisdom of toxicology – that the dose makes the poison. ‘You cannot dissolve enough atrazine in the water to kill a tadpole,’ comments Hayes, ‘so it’s “safe” – at least that’s what the industry has been bragging about for 40 years. But really it’s time to redefine our concept of non-toxic, because at levels that are equivalent to one one-thousandth of a grain of salt dissolved in a litre of water, atrazine can produce profound reproductive and developmental deformities.’

Like many endocrine disrupters, a mixture of atrazine and other hormone-disrupting pesticides can end up producing an additive or ‘cocktail effect’ where the damage caused becomes greater than could otherwise be predicted with each additional toxin

‘When I testified for the EPA, I was advised to stay in a different hotel each night and let a federal officer know where I was’

in the mix. But even more revealing is the way that chemicals like atrazine



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can interact with stressful aspects of the animals' lifestyle to unpredictably and profoundly alter levels of several key hormones. At a very primitive level the body does not distinguish between the stress of being exposed to an environmental toxin and the stress of being exposed to, say, a predator. The reaction on a chemical level is just the same and the release of stress hormones triggered by these stressors can produce a cocktail effect that profoundly disrupts the hormonal balance and immune function of the animal.

'The fact is no animal is exposed to only one stressor, to only one thing that we've done to the environment. The next challenge for researchers, and we are currently working on this in my lab, is to look at what happens when you mix one type of stressor with another set of stressors. What if you consider global warming? What if this mixture is now combined with the stress of higher temperatures? What if that stress of high temperature is now combined with the pond drying up, which increases the concentration of the pesticides in the water?

'So now there's interaction between three stressors: the pond drying up, increasing temperature and the pesticide. As the pond dries up the animals become more crowded, that's another stressor. Now we've got density, temperature, desiccation and pesticides, making it likely that the immune system is shot due to all this stress. Now throw in a parasite that's naturally there, which the immune-compromised animal's body won't be able to fight off.'

'This is troublesome because it's going to take a lot of work to take all these pesticides that are currently on the market, that have been tested individually and at high doses only and start testing them in combination and at low doses and in real world situations. It's going to be a nightmare for regulators because they have to try and not only regulate a single

compound, but regulate the mixtures as well. And even if they can regulate you as a farmer, how are they going to regulate what your neighbour is laying down that might mix with what you have used?'

**Keeping it simple**

Although the EPA espouses a 'weight of the evidence' approach to regulation, the real weight of the evidence for atrazine, according to Hayes, has never been fully reviewed. He notes that it was an act of Congress, not a regulatory agency like

By the 1980s, atrazine had been associated with high rates of prostate cancer among workers at Syngenta manufacturing plants

the EPA, which eventually banned DDT in the US; likewise it was Ronald Reagan who eventually banned tributyltin. In fact the EPA has never acted to ban a dangerous substance that it has previously approved and Hayes envisages that should atrazine ever be banned in US it would require a similar act of Congress or presidential intervention. In his view many regulatory agencies are simply unequipped to deal properly with the emerging science of endocrine disruption and low-dose effects. Further, there is an urgent need to address the impact of pesticide mixtures and how these mixtures interact with other environmental stressors. These issues need to be addressed separately from any bottom line concerns, and yet with a world market for atrazine worth over \$400 million, the bottom line is never far from regulators' thoughts.

'I don't trust in government agencies to make good choices about what is safe and what is not. To me it's unforgivable when an agency that calls itself the Environmental Protection Agency begins weighing the economic cost of banning atrazine against the public health cost of maintaining atrazine and giving economic considerations considerably more weight in the final analysis. And yet that is what is happening at the moment. If that's the case, then don't call yourselves the Environmental Protection Agency, call yourself the Economic Protection Agency.

'It's the same thing with agencies

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## ATRAZINE

like the FDA; Vioxx was approved right? In fact, I've often given a talk that I call "Is atrazine the EPA's Vioxx?" Have they allowed industry to influence their decisions and forgotten about what their mission is? I would say yes they have, and my role is to make sure that they know that all this data on adverse effects exists, rather than allowing them to get away with saying no such research exists – because that simply isn't true.'

'Beyond that I have avoided getting too involved in the politics, because I don't want to lose my objectivity as a scientist. I want to be able to do my research and present my data in as unbiased a way as possible.'

Increasingly Hayes is placing his faith in the public to press for and achieve lasting change, and as his work has progressed has become acutely aware that the things that mean the most to scientists mean nothing to 99 per cent of the public. In keeping with the human touch displayed at his many lectures, Hayes' says his ultimate goal is to make his work more accessible to people who are not scientists but who nonetheless could be on the receiving end of any health effects from atrazine exposure.

Prostate and breast cancer, for instance, are two of the top causes of death in Americans age 25-40, but Black and Hispanic Americans in particular are several times more likely to die from these diseases.

'As scientists we're arguing in front of the EPA, but the farm workers and the public don't ever know about it. Ethnic minorities and people of low income are most likely to hold the "unskilled" labourer positions in agriculture and pesticide production that would put them at higher risk of exposure. They are also least likely to have access to the emerging science demonstrating the dangers of that exposure. So this environmental and public health issue is also a racial/social justice issue because minority and working class people are the primary targets of pesticide exposure.'

'I'm past the point of believing that you have to use big words to sound smart and one of the catalysts for this was when my first *Nature* paper was published. *Nature* is considered the gold standard for scientists and I was fairly young when this

paper came out and I remember talking to my mom, who is not a scientist and not an academic. I was trying to explain to her why this particular paper was so important and she was having difficulty understanding because I had already had several papers published by that point. Anyway, the next day she calls me up and says, you know I'm really sorry and I know you said it was really important, but I went to Barnes and Noble and they've never heard of *Nature*. Immediately it struck me, just how important is this kind of thing really? How important is it that we are holding this journal up as a kind of Holy Grail of science when my mom can't buy a copy of it.'

Hayes' faith in average people to get the point and take up the campaign to ban atrazine for themselves is noble, but it doesn't solve the immediate problem of continued and widespread use of this toxic herbicide. Although it has been banned in the EU due to concerns over groundwater contamination, the full ban will not come into effect until December 2007. Elsewhere in the world its use is largely unrestricted. For instance, while the EPA acknowledged that the Ecorisk studies presented to it were flawed, it nonetheless reapproved atrazine for use in the US in October 2003. No new restrictions were placed on atrazine's use; the ruling called only for Syngenta to

monitor the herbicide's levels in drinking water – and certainly if levels rose this could lead to more stringent regulatory action. The EPA also called for more studies. 'And guess who's going to do those studies?' Hayes asks. 'Syngenta.'

According to Hayes, these industry studies can go on for years with results never being reported to the EPA because they have no end point. That way, if they find something bad, the company buys time with these 'unfinished' studies to look for a replacement product. Syngenta has already offered such replacement products to farmers in the EU. In time they will surface in the US and elsewhere.

Hayes is, of course, continuing to develop his own research in this area. But with little commitment from industry to researching the human fall-out from 45 years of widespread atrazine use, Syngenta may well end up escaping litigation by the skin of its teeth; and if atrazine does cause cancer in humans, parent company Novartis has conveniently developed a breast cancer drug Letrozole to help. With doleful irony Hayes comments, 'They give it to you and then, for a price, they offer to take it away.' But there's a catch. Letrozole is another hormone disrupter, and works by blocking the effects of estrogen in the body. It is also associated with birth defects.

The story of atrazine is a modern



PHOTOGRAPH BY NATURE PICTURE LIBRARY/ROLF NUSSBAUMER

cautionary tale that asks us to decide just how far corporate responsibility stretches and how bullish and outspoken are we prepared to be to protect ourselves and our children from the devastating long-term consequences of hormone disruption.

Sperm counts are declining, breast cancer is on the rise. Reproductive

'Have the EPA allowed industry to influence their decisions? I would say yes'

abnormalities in boys such as hypospadias (the urethra opening on the underside of the penis) and cryptorchidism (undescended testicles) have become so commonplace that in some places physicians are no longer required to report them as abnormalities. The generational effects of known hormone disrupters such as diethylstilboestrol (DES), which is still causing cancer and reproductive devastation in the granddaughters of women who took it to prevent miscarriage 60 years ago, present a horrific picture of how damaging and how long term the effects of chronic exposure to 'weak' xenoestrogens – that is estrogens that originate outside the body – can be.

Because these changes have occurred over a relatively short period, environmental rather than genetic factors are the most plausible explanation. The question is do we sit back and chalk it up to life in the modern world or do we press to draw a line under the use of this clearly toxic herbicide? If the Precautionary Principle is going to be anything other than hollow rhetoric, then coordinated worldwide action to remove atrazine from the marketplace isn't just desirable, it is necessary, urgent and long overdue.

**FOR MORE INFORMATION**

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Our Stolen Future

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

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A photograph of a chimpanzee reaching up with its arms outstretched, attempting to catch a massive swarm of flying termites in a tree canopy. The termites are densely packed in the air, creating a white, misty cloud against a clear blue sky. The chimpanzee's dark fur and hands are visible on the right side of the frame, reaching towards the center. The bottom of the image shows the green leaves and branches of the tree.

**ANIMAL BEHAVIOUR: MAMMALS**  
**KRISTIN J MOSHER, USA**

**TERMITE CATCHING**

Kristin Mosher was following the five-year-old chimpanzee twins, Glitter and Goldi, while they foraged in Tanzania's Gombe National Park. As the twins crested a grassy slope, they suddenly dashed excitedly to a tree ahead of them and climbed it. Kristin watched in astonishment at the scene that unfolded. 'Winged termites were swarming in the canopy, something I'd never seen before,' she said. 'Usually the chimps stand on the ground and catch them as they crawl out of mounds. So when the twins started to grab recklessly at the cloud of flying termites, I knew it was special.' Here, Glitter balances precariously at the top of the tree, snatching termites out of the air. 'To me, the image is powerfully symbolic,' says Kristin. 'It reflects the condition of the whole species – teetering on the edge of extinction.'

Canon EOS-1N with 100-400mm f4.5-5.6 IS Ultrasonic zoom lens; 1/100 sec at f6.3; Fujichrome Provia 100F.

This photograph was one of the winners of the Wildlife Photographer of the Year competition, organised by the Natural History Museum and *BBC Wildlife Magazine*.



# Apocalypse Now

BY MARIA GILARDIN

How mankind is sleepwalking to the end of the earth.

Humans have transformed the earth in a dramatic way, especially over the last 50 years. Not only have we drastically changed the carbon cycle by burning fossil fuel and coal and by increasing forest fires, we have also changed the nitrogen cycle worldwide by the amount of nitrogen being fixed by industrial agriculture and fertilizer use.

We have transformed more than half the land surface through agriculture, deforestation, mining, industry, paving, and ever-growing cities. These changes have altered the climate systems by the way moisture is exchanged between earth and the atmosphere.

We have destroyed biodiversity by shifting plants and animals to places and conditions where they cannot survive. We are seeing the most basic of our needs – air, water, housing, and energy – disappear before our eyes. And this demise of our common life-support system is being accelerated by ever more energy-intensive activities, by which a privileged group of people attempts to secure its survival.

A conference on avoiding dangerous climate change at the Hadley Centre in Exeter was held explicitly to convince the Bush administration to join the rest of the industrialised world, and to use the July 2005 G8 meeting to set limits on greenhouse gas emissions. The United States and Australia, the world's two largest polluters, were refusing to be part of any global agreement to limit CO<sub>2</sub> and other greenhouse gases.

The G8 meeting came and went. The US, with 42 per cent of global fossil fuel CO<sub>2</sub>, and 34 per cent of combined greenhouse gas emissions, not only remained outside the climate-stabilisation effort but also fought vigorously to prevent any progress in setting limits. Given the extraordinary amount of greenhouse gases emitted by the US, this country alone can dramatically slow climate change, or bring the planet to the boiling point.

Three weeks before the G8 summit, *The Observer* printed a set of leaked documents revealing how the Bush White House derailed attempts to address global warming. These submissions to the G8 action plan show that Washington officials deleted even the suggestion that global warming has

already started.

Among the key sentences removed were: 'Our world is warming. Climate change is a serious threat that has the potential to affect every part of the globe. And we know that ... mankind's activities are contributing to this warming. This is an issue we must address urgently.'

At the Hadley Centre Climate Change Conference in February 2005, the International Climate Change Task Force UK said that if we do nothing the climate system will collapse. Stephen Byers, the co-chair of that task force and an advisor to Tony Blair, said the point of no return could be reached in a decade. The Bush delegation to the July 2005 G8 summit in Scotland, probably even George Bush himself, is aware of that deadline.

At the UN Climate Conference in Montreal in December 2005 the US again undermined the talks. The Bush administration had sent Harlan Watson, senior climate negotiator for the US Department of State (suggested for that position in 2001 by ExxonMobil, a company that has consistently opposed mandatory curbs on greenhouse gases).

Exxon was present behind the scenes in Montreal as well, and on December 8, 2005, *The Independent* revealed the extraordinary campaign by the Competitive Enterprise Institute (an Exxon funded think-tank that takes credit for having prevented US adoption of the Kyoto treaty), to destroy Europe's support for an extension of the treaty by lobbying large EU corporations to join in dismantling Kyoto in Europe.

Watson held out until the very last day to sign the Montreal agreement, doing so only when it became clear that, of 188 other countries, only Saudi Arabia would side with the US. While the 157 Kyoto signatories agreed to extend the treaty's emission-cutting targets after formal expiration in 2012, 189 countries – including the US, China, and India – agreed only to non-binding discussions.

The perceived need to include the US, the world's largest polluter, in future negotiations had a devastating effect on the treaty's language, leading to an agreement at the lowest common denominator: 'non-binding

“a further one degree centigrade increase in world average warming would take the earth into climate patterns it has not experienced for more than 500,000 years”



discussions', 'voluntary measures', 'market-based opportunities' – this when stringent emission reductions are urgently needed at once, not in six years.

However, the US is not solely responsible for the stalemate. Tony Juniper from Friends of the Earth, remarked: 'Tony Blair had thrown doubt on the whole future of Kyoto before the talks, when he seemed to side with George Bush and stated that no country would want to negotiate another agreement with targets and timetables like Kyoto.'

The Global Business Network wrote in the only official document that does not deny climate change, 'Climate Change as a National Security Concern', commissioned for Donald Rumsfeld by Pentagon defence adviser Andrew Marshall, and made public in February 2004: 'The focus in climate research has slowly been shifting from gradual to rapid change. In 2002, the National Academy of Sciences issued a report concluding that human activities could trigger abrupt change.

A year later, the World Economic Forum in Davos, Switzerland, included a session at which Robert Gagosian, director of the Woods Hole Oceanographic Institution in Massachusetts, urged policymakers to consider the implications of possible abrupt climate change within two decades.'

Whether in a decade as UK scientists say, or two as the Pentagon study says, a consensus is developing that we are reaching a phase of dangerous, abrupt, and irreversible climate shifts. However, for the Bush administration, this is not an ecological or humanitarian issue, but a military issue. They question only how to protect US borders from environmental refugees, how to overpower nations collapsing under environmental pressures, how to keep access to food, water, and energy as other parts of the world go hungry and thirsty, and how to keep nuclear pre-eminence, while those weapons in other countries fall into the hands of insurgents.

The eerie similarity of these goals and

“...in Western Siberia, a permafrost area the size of France and Germany combined is thawing for the first time since the Ice Age, 11,000 years ago”

ILLUSTRATION BY MARTIN ROWSON

methods, with those of the so-called war on terrorism, raises the question of whether that war on terrorism is not really already a war on the earth. And, as in the war on terrorism, the already occurring ecological disasters – like the Osama bin Ladens – are needed and promoted. And the religious fundamentalists are driving this forward because God has given them dominion over the planet to do as they wish.

The year 2005 was the second warmest year on record, and among the four warmest years since 1861, according to the World Meteorological Organization (WMO). And it may well be the year of ecological landslides, when climate change becomes self-reinforcing and begins to spin out of control. Consider these news items from the last months of 2005:

In October, glaciologists meeting at the Royal Society in London argued that the South Pole could be the principal cause of rising sea levels. The edges of the West Antarctic ice sheets are crumbling at an unprecedented rate. The Pine Island and Thwaites glaciers are discharging more than 110 cubic kilometres of ice each year, a rate three times that of a decade ago.

NASA reported in September that in the summer of 2005 the Arctic sea ice around the North Pole shrank to 200 million square miles – 500,000 square miles less than its average area between 1979 and 2000. In August 2005, Arctic sea ice reached its lowest monthly point on record, dipping to an unprecedented 18 per cent below the long-term average.

In November, Geophysical Research Letters published evidence that Greenland's vast ice cap may be at the point of irreversible meltdown. Glaciers that have been stable for centuries, such as the giant Helheim, which dropped 100 feet in summer 2005, are melting. Its leading edge – unchanged in location since records began – has retreated four-and-a-half miles.

The vast amount of fresh water discharged into the Northern ocean now threatens the Gulf Stream, which warms Britain and the rest of northern Europe whose latitude is that of Labrador. In a December 2005 article in *Nature*, a group of British oceanographers from the National Oceanography Centre reported that the flow of the Gulf Stream has diminished in strength by 30 per cent over the past 50 years, alarming them; they had not expected such dramatic changes so soon.

The European Project for Ice Coring in Antarctica (EPICA) announced in November 2005 that there is more CO<sub>2</sub> in the atmosphere

today than at any point in the last 650,000 years. Today's still rising level of CO<sub>2</sub> is already 27 per cent above the highest peak during all those millennia, according to lead researcher Thomas Stocker of the University of Bern, Switzerland. Moreover, that rise is occurring at a speed 'that is over a factor of a hundred faster than anything we are seeing in the natural cycles.'

In October 2005, the Global Monitoring Division of NOAA announced that the hole in the Antarctic ozone was as severe as at any point on record in the past 10 years. The hole extended to near-record proportions at about 27 million square kilometres, vaster than North America. This occurred in spite of the reduction of ozone-depleting chemicals such as chlorine and bromine compounds.

In early December 2005, the *New York Times* reported a record-breaking drought in the Amazon River Basin – the worst since record keeping began a century ago. Scientists say the drought is most probably the result of the same rise in water temperatures that added to the severity of the 2005 hurricane season.

Daniel C. Nepstad, senior scientist at the Woods Hole Research Center in Massachusetts, told the *New York Times*: 'We have no idea of the game we have played into, by running this worldwide experiment of pumping so much greenhouse gases into the atmosphere.'

A leading US climatologist warned that the world has just one decade to slow down climate change: NASA's Dr. James Hansen told a meeting at the Geophysical Union in San Francisco that a further one degree centigrade increase in world average warming would take the earth into climate patterns it has not experienced for more than 500,000 years.

In early August 2005, the *New Scientist* reported that in Western Siberia a permafrost area, the size of France and Germany combined, is thawing for the first time since the Ice Age, 11,000 years ago. What was, until recently, an expanse of frozen peat is turning into a broken landscape of mud and lakes, some more than a kilometre across. The area's peat bog contains an estimated 70 billion tons of methane, a greenhouse gas 20 times more potent than CO<sub>2</sub>, which, if released, could dramatically increase the rate of global warming.

Even in a best-case scenario, were the methane to be released slowly over a period of 100 years, it would effectively double atmospheric levels of the gas, leading to a 10 to 25 per cent increase in global warming, said scientists at the Hadley Centre in Exeter, UK.

“ Since the US government and corporations not only refuse to cut back but are driving eco-collapse forward, it is up to ordinary people to refuse ”

The scientists from Tomsk State University and Oxford, who discovered the melt, said that this was yet another feedback effect, an 'ecological landslide that is probably irreversible and is undoubtedly connected to climatic warming.'

There may be some, cynical enough to think that climate change is an interesting science fiction experiment, or greedy enough to want to extract the last drop of oil from the dying earth for a profit.

But what about the rest of us: not cynical, not greedy or arrogant? It is pretty clear that there need to be BIG changes in the way we live – and that is frightening for many, since we have become so dependent on this technological civilisation. However, scientists tell us that the extreme weather events to come, such as floods, hurricanes, sea-level rise and unprecedented heat waves, are more frightening than any change in the way we choose to live now.

There is a set of figures that is both deeply depressing and hopeful. The last published World Bank data for CO<sub>2</sub> emissions per capita indicate that, while every man, woman, and child in the US puts out 20 metric tons of CO<sub>2</sub> per annum, those in the European Union put out eight per person per year, China two, and the output of Nigerians, who supply us with much of the oil that we burn into CO<sub>2</sub>, is zero – below scale. In 2002, US-Americans used over 12,000 kilowatt-hours of electricity per person, Europeans used less than half the amount, while the use in China is 987 kilowatt-hours per person. The US per-capita use of oil is twice that of the European Union, and more than eight times that of China.

What if China aspires to our standard of living? And why not, if we are not willing to cut back? Europe gets by with so much less CO<sub>2</sub> -output and energy-input, while already planning for further cuts. Where is the measure of global justice between those who cause no harm and those whose extravagant use of fossil fuels harms everybody else?

Regardless of who is driving this – industry, the military, religious fundamentalists, or any permutation of government, be it red or blue – responsibility for the approaching climate collapse will fall overwhelmingly on the United States. Since the US government and corporations not only refuse to cut back but are driving eco-collapse forward, it is up to ordinary people to refuse collaboration and to control the perpetrators.

George Monbiot, addressing the December 3 London Climate March in London, said:

'We inhabit the brief historical interlude between ecological constraint and ecological catastrophe... The structure, the diversity of our lives, everything we know, everything that we have taken for granted, that looked solid and non-negotiable, suddenly looks contingent... We need not a 20 per cent cut by 2020; not a 60 per cent cut by 2050; but a 90 per cent cut by 2030.'

The opportunity and time to make a difference that will affect the entire planet is now. But will we?

*An extended version of this comment piece can be read on [www.theecologist.org](http://www.theecologist.org)*

■ Maria Gilardin produces TUC Radio, a weekly half-hour radio programme that is distributed for free to all radio stations via Pacifica Radio's KU Band, and as an mp3 file on TUC Radio's website: [www.tucradio.org](http://www.tucradio.org). She may be reached at [tuc@tucradio.org](mailto:tuc@tucradio.org)

## Holding trustees to account

Climate change is unlike any other 'risk factor' our modern financial system has ever confronted. It is a universal threat that will spare no nation, no market and no industry. This presents a particular challenge for the money managers of the world, whose success relies on their ability to manage risk. Climate change renders this power impotent. It's a risk that can't be managed around, and the only rational course of action is to minimise its impact. And money managers are in an uniquely powerful position to do so.

They are more properly called 'trustees' and are bound legally by a strict code of conduct: they must act with prudence in the best interests of the people for whom they manage money. This is usually taken to mean that their job is to make as much money as possible as quickly as possible. The CEOs of public companies are 'corporate trustees' loyal to shareholders. 'Investor trustees' oversee pensions, endowments, and other monies earmarked for securing future wellbeing.

Only a few thousand individual trustees form this bulwark of the global economic order, and are in a position to use the almost unimaginable stores of accumulated wealth under their control to help minimise the problem of climate change. The difficulty is

BY MICHAEL  
NORTHROP &  
DAVID SASSOON

The trustees who control the world's financial assets – on our behalf – have long argued that their sole concern is to maximise financial returns. Wrong, say Michael Northrop and David Sassoon. It is also their duty to act to minimise climate change.

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# Woodland Officer

Hampshire & Oxfordshire

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We are seeking an experienced conservation and forestry manager who also has knowledge of at least one of the following areas: contract management or ecological management, community project delivery, or conservation policy.

You will need the drive to plan and implement all aspects of woodland management projects throughout the area. Your role will involve working with local people, the public, volunteers, landowners, community groups and other organisations on matters relating to site management. Events, activities and networking to raise the professional standing of the Woodland Trust will also be important.

You will be qualified to a minimum of HND, preferably degree level in forestry, land management or with experience in a related field. You should be accustomed to direct site management for environmental or public access objectives and ideally be familiar with budget management for FSC/UKWAS certification. With excellent written and verbal communication skills you will also be IT literate with MS office experience.

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that trustees are almost fully invested in the very things that are creating the problem, in the careless consumption of fossil fuels.

They can deploy their enormous power and wealth to help chart the course to a low carbon future, or risk universal ruin. This is a logical, scientific and financial certainty.

It is a responsibility that most trustees have yet either to welcome or admit. They are a highly conservative group, slow to change and, arguably, rightly so. Theirs is an onerous trust. Hundreds of millions of people count on their faithful duty to safeguard their financial security. How are trustees now to cure the prevailing economic order of its addiction to fossil fuels? Why should such an obligation fall on them? The answer is simple. Carbon has caught up with their world. Arnold Schwarzenegger of California put it succinctly: 'The debate is over, we know the science, we see the threat and the time for action is now.'

The first action trustees must take is to stop characterising climate change as an 'externality'. An 'externality' is a category invented by economists. It has allowed us to regard the environment as a commons of which we all have equal and unrestricted access to pollute. We have been lulled into a state of persistent complacency by this utilitarian language. Externalities, we have been narrowly taught to believe, could always be dealt with through some manipulation – regulation, subsidy or an assignation of property rights. But as John Holdren, the Harvard scientist, has repeatedly pointed out, the climate is the 'envelope' within which all human activity takes place, and it has now practically reached its safe limit of carbon content. There is no longer an 'external' place to dump our carbon.

Matthew Kiernan, chief executive of New York-based investment research firm Innovest Strategic Value Advisors, has been trying to influence trustee decision-making for more than a decade. 'What's still missing is even a single dollar of investment redirected as the result of a concern over carbon,' he says. But the climate issue is gaining unprecedented traction, and Kiernan's complaints are a matter of emphasis. He also points out that the evidence of trustee concern over carbon is increasingly abundant.

Kiernan was in New York in September for the launch of the third Carbon Disclosure Project (CDP3) report. The data in CDP3 was collected on behalf of 155 investors with assets of \$21 trillion, representing about half the money under the management of investor

trustees on the planet. Kiernan's company oversees the collection of data from the FT500 companies that are asked to fill out a nine-question survey. He reported that 71 per cent of companies completed the information request, and as a result he was able to provide an analysis of 'carbon beta' – the carbon risk of a particular company relative to its sector.

'If you are about to invest \$10 million of someone's pension in a utility, and you don't know which utility has 30 times the carbon risk exposure of the others, then you are derelict in your trustee duty,' he told a roomful of trustees gathered for the occasion. 'We are starting to bring carbon risk exposure down to a detailed level, and the next frontier is integrating climate risk into stock selection and portfolio construction.'

Last month, The Climate Group released its second annual *Carbon Down, Profits Up* report, which includes information on more than three times as many companies as last year's first edition. The report gathers data to demonstrate that 'addressing global warming does not have to result in economic cooling'. Its simple tables detail the greenhouse gas reduction efforts of 74 companies, which yielded \$11.9 billion in gross savings, largely from energy efficiency measures.

The report is particularly surprising for two reasons: it was compiled entirely from publicly available sources, and it suggests that energy efficiency is a great unrealised frontier of profitability. Here is evidence of a vanguard of companies that has transformed climate change into a business opportunity. These are facts of great material importance, and a trustee acting faithfully to duty would direct the armies of researchers, analysts and consultants in its own employ to look for further evidence and actionable data.

'Unfortunately, the trustees are generally passive and are deferential to the "professionals" they employ for investment advice,' Kiernan points out. 'And the typical compensation structure doesn't provide incentives for consultants to go after this new kind of available information. The tail is wagging the dog, and the result is an unconscious conspiracy to maintain business as usual.'

Even so, from within this shadowy world of investment consulting a groundbreaking report has recently emerged that contains the following unexpected and singular advice: 'It is consistent with trustee responsibility to address climate change risk.' The report,

“ If you are about to invest \$10 million and you don't know which utilities have high carbon risk exposure, then you are derelict in your trustee duty ”

called *A Climate for Change: A Trustee's Guide to Understanding and Addressing Climate Risk*, provides trustees with the first step-by-step, how-to guide on the subject ever published.

'The report is a huge step,' Kiernan says, 'not only because of its contents, but because it was published by one of the world's leading investment consultants, Mercer.'

Mindy Lubber has a different window on the world of trustees. As head of CERES, a US coalition of investors and environmental groups, she uses her organisation to improve corporate and public policies on climate change. 'I'm seeing change every single day, particularly on corporate governance as it relates to climate change,' she says, 'but the pace is slow. Wall Street is driven by short-term concerns, and until something occurs with a substantial short-term impact, investors are just not going to move their money.'

But these short-term events are multiplying, and the impact of a new carbon calculus on major industrial sectors is not hard to see. In the auto industry, Toyota's unprecedented success in popularising hybrid cars has provoked beleaguered US automakers to respond. On consecutive days in September, GM announced a strategy to place emphasis on 'fuel efficiency' and Ford announced that it plans to build 250,000 hybrids annually by 2010.

Pressure on corporate trustees is emanating from many other quarters. Shareholder resolutions are multiplying in frequency and forcing companies to issue climate change reports and devise emission reduction strategies. The US Securities and Exchange Commission is being asked to enforce disclosure regulations so that companies will include carbon risk assessments in their routine filings. Rising oil prices, worsening oil security, and the threefold increase in the price of carbon credits in the EU Emissions Trading Scheme since the start of trading in January all point to the growing financial lustre of carbon.

The release of new and relevant information is also now coinciding in unexpected ways with critical, defining events. A recent CERES report provides an instructive example. The report details the risk to the insurance industry from weather-related losses resulting from climate change. It is now slated to be presented at the winter meeting of the National Association of Insurance Commissioners (NAIC) in December. Its impact is sure to be amplified by the fact that NAIC's fall meeting was cancelled. It had been scheduled for September 10-13 in New

Orleans.

Trustees have accommodated changes of great magnitude before. For the first half of the 20th century, the courts prohibited them from investing in common stock. It was considered too speculative in a time when bonds reigned supreme. The second half of the century saw the development of the modern portfolio theory, and trustees found themselves armed with a new method of minimising risk that has gained universal acceptance.

Climate change, as a fundamental alteration of global reality, requires another paradigm shift in the calculation of risk, and a consequent response – only this time the stakes are much higher. The flow of capital has world-changing force, and now that carbon has caught up with trustees, they have the opportunity – and the undeniable duty – to help lead us away from a remorseless tragedy of universal ruin.

■ Michael Northrop directs sustainable development grant-making at the Rockefeller Brothers Fund in New York. David Sassoon is founder of Science First Communications, New York. Emails: [mnorthrop@rbf.org](mailto:mnorthrop@rbf.org) and [sassoond@worldnet.att.net](mailto:sassoond@worldnet.att.net). This piece first appeared in Environmental Finance magazine.

“ Greenhouse gas reduction efforts of 74 companies yielded \$11.9 billion in savings ”

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## BEHIND THE LABEL

# INTERIOR PAINTS

Thinking of brightening up your house for spring? Think again, there's a lot more to paint than meets the eye. BY PAT THOMAS

Behind the Label helps you know what's really in the products you use everyday. We welcome all suggestions from readers for products that need peering into.

Write or email: [pat@thecologist.org](mailto:pat@thecologist.org)

A fresh coat of paint is a quick, cost-effective way to give even the scruffiest space a new lease on life. Yet we seldom stop to consider the ingredients that make up the average tin of interior paint. Many cases of sick building syndrome have been traced to the chemicals in interior paints, which include solvents and other volatile organic compounds (VOCs).

The 'clean' smell of new paint is actually vapour released from these chemicals as the paint dries. This off-gassing can carry on for months and even years after the paint has been applied.

Common VOCs in paints, primers and varnishes include benzene, formaldehyde, kerosene, ammonia, toluene, and xylene, all of which are known carcinogens and neurotoxins. Exposure to VOCs can irritate your eyes, nose, throat and skin and are proven to increase allergies, asthma, and respiratory problems, central nervous system symptoms (such as headache, rapid heartbeat) and even weaken the immune system. They can also be harmful to the liver and kidneys. In addition, it is now known that it is possible for two or more 'less harmful' VOC's to combine to create a more powerful toxin.

Research last year in the journal *Thorax* showed that exposure to VOCs increase the risk of childhood asthma. Swedish research published in the *Journal of Occupational and Environmental Medicine* in 2002 shows that people in the painting trades or who work in paint manufacturing may have an increased risk of various cancers. For men the risk was greater for bladder and lung cancer, for women cancers of the oesophagus, larynx and oral cavity were more common.

In terms of its environmental impact,

for every ton of paint produced, the resulting waste can be anything up to 30 tons. Once in the soil or air, this waste can be persistent and toxic.

Household paints contain carrier oils, dispersion agents, viscosity adjusters, thickeners, surface tension adjusters, plasticisers and preservatives and many contain synthetic colours. Some contain antifungal agents such as arsenic disulfide, phenol, formaldehyde, and quaternary ammonium compounds.

Modern emulsions are water-based, with vinyl or acrylic resins added to make them more hardwearing. The amount of resin determines the varying degrees of sheen seen in matt, eggshell, silk and satin finishes. Gloss paints are oil-based and include resins to give them a hardwearing quality.

Forty-four per cent of British householders purchase interior paints more than once a year. In 2003 Britons splashed 83 million litres of paint on their walls, worth £144 million. Americans spend roughly \$17 billion on paint a year, equalling about 1.3 billion gallons (5,100 billion litres).

The Environmental Protection Agency (EPA), ranks paint on its top-five list of environmental hazards and a study conducted by the US agency found that VOC levels indoors can be 1,000 times higher than outdoor levels when an indoor paint is drying. Paint solvents are of particular concern to people with heart conditions because methanol and certain other compounds can stress the heart. Also of note, contact lenses absorb strong vapours and hold them against the eyes, causing irritation and/or damage.



COMMON INGREDIENTS	PURPOSE	ADVERSE EFFECTS
<b>Acetone</b>	Solvent	Eye, nose and throat irritation, headache, dizziness, dermatitis
<b>Ammonia</b>	Preservative	Eye, skin and respiratory irritant, asthma trigger
<b>Benzene</b>	Solvent	Skin, eyes and upper respiratory tract irritation. Neurological symptoms from inhalation include drowsiness, dizziness, headaches, immune system damage, blood disorders; carcinogenic
<b>Ethylene acrylate</b>	Film former, polymer	Irritation to the eyes, respiratory system and skin; potential carcinogen
<b>Ethylene glycol</b>	Solvent	Central nervous system depression; ingestion causes kidney damage
<b>Formaldehyde</b>	Preservative	Irritates the eyes, nose and throat; allergic skin reactions; breathing difficulties; carcinogenic
<b>Kerosene</b>	Solvent	Eye, skin and respiratory system irritation; dermatitis; anaesthetic; toxic to aquatic life
<b>Methyl alcohol</b>	Solvent	Eye, skin, mucous membrane irritation. Overexposure can provoke headache, drowsiness, nausea, vomiting and blurred vision
<b>Phenol</b>	Biocide	Mouth, eye, nose and throat irritation; dermatitis, headache, dizziness, muscle ache and pain, tremors and twitches
<b>Propylene glycol</b>	Solvent	Inhalation and skin contact can cause dermatitis with erythema, oedema, and weeping
<b>Quaternary ammonium compounds</b>	Biocide	Skin, eye and nose irritation
<b>Trichloroethylene</b>	Solvent	Central nervous system effects including sleepiness, fatigue, headache, confusion, and feelings of euphoria. Damage to the liver, kidneys, immune and endocrine systems
<b>Vinyl Acetate – Acrylic Copolymer</b>	Film former	Eye, nose and throat irritation, lung damage; convulsions have been observed in rodents inhaling high levels
<i>NOTE: Space restrictions prohibit full referencing, however Behind the Label draws on data from published studies and reports in medical, scientific and trade journals, government sponsored databases (e.g. the US National Library of Medicine) and relevant Material Safety Data Sheets (MSDS).</i>		

## ALTERNATIVES

Safer alternatives exist. Some contain no chemical solvents, while other, more widely available commercial brands just contain a lower percentage of VOCs than conventional paints. Eco-friendly paints make use of ingredients such as turpentine or d-limonene as alternatives to white spirit. Instead of plastic binders they may use linseed oil and casein and chalk and clay may replace fillers such as titanium dioxide. Colours are often derived from natural earth and mineral pigments.

Auro Organic Paints

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

Livos paints

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

Earthborn Paints

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

Earth & Reed

[www.earth-and-reed.co.uk](http://www.earth-and-reed.co.uk)

Aquamajin

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

Biofa

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

Nutshell Natural Paints

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



Earthborn Paints





# ORGANIC COTTON

Excessive subsidies in the US and EU are killing the cotton trade in Burkina Faso, and the heavy doses of pesticide used on the cotton are killing the farmers. But there is hope, provided we in the West are prepared to pay more for fairly traded organic cotton.

Photographs and story by **Kate Eshelby**

## ORGANIC COTTON

Up against the wall. EU and US trade subsidies cause overproduction, artificially distorting world markets and driving cotton prices down. In March 2004, the World Trade Organisation (WTO) ruled that the majority of US cotton subsidies were illegal, but so far the US has refused to comply with the ruling. The figures are mind-boggling: one 40,000 acre Arkansas farm receives subsidies equivalent to the average income of 25,000 people in Burkina Faso. The overproduction is shipped to poorer countries, depriving local farmers of their livelihoods.



Although perceived as a 'natural' product, growing cotton is a chemically intensive process. Cotton crops occupy just three per cent of global farmland, but consume 25 per cent of the world's pesticides and fertilizers. It is also a thirsty crop and water diverted to cotton crops is often at the expense of the environment and the wellbeing of the local population. Because of the heavy use of pesticides, cotton farming has become a serious threat to the health of farmers and the environment. In developing countries pesticides that are either banned or restricted – such as endosulfan, a central nervous system poison and potential carcinogen – are used without restriction or instruction by farmers to help keep production levels high.

**On small West African farms such as this one near Bobo, cotton fields are prepared by plough and both seed planting and picking are done by hand. This is in stark contrast to the US where huge, computerised harvesters pick the cotton and aerial sprayers administer the fertilizers and pesticides.**





## ORGANIC COTTON

Increasingly, local farmers are turning to organic production as a profitable and sustainable alternative. Organic cotton production makes use of a variety of natural pesticides such as neem seeds which keep cotton pests at bay, while natural and freely available fertilisers such as cow manure enhance the soil. There are now 663 organic farmers in Burkina Faso, up dramatically from just 72 in 2004.

While the world market still sees organic cotton as something of a novelty, sales are increasing by about 25 per cent a year and west African farmers are banking on an increasing awareness of the human cost behind cheap textiles – loss of land, loss of animal and human life – to fuel a sea change in the buying habits of clothing designers and consumers.





# RAINFOREST ACTION NETWORK

Described as a 'mosquito inside a tent', Rainforest Action Network are forcing corporate America to change its destructive practices. **Nicola Graydon** meets this inspiring group of activists.

The last five years have seen three of America's largest financial institutions – Citibank, Bank of America and JP Morgan Chase – coming out with environmental policies: both publicly and in documents they can be held to.

In May last year the board of JP Morgan Chase announced that they were going to lobby Washington about global warming. In September they used the brutal hurricane season – which cost approximately \$200 billion in damages – to warn US clients that global warming poses financial risks.

Then, in November, it seemed as though the unthinkable had happened: Wall Street was turning a shade of green that was not solely linked with a dollar bill.

The financial pages of American newspapers began buzzing with the news that Goldman Sachs had called on the Government to introduce mandatory regulations to confront climate change, saying that 'voluntary action alone cannot solve the problem'.

In a carefully worded Environmental Policy Framework the company also acknowledges that 'diverse, healthy natural resources – fresh water, oceans, air, forests, grasslands and agro-systems – are a critical component of social and sustainable economic development' and that as a leading global financial institution they 'take seriously our responsibility for environmental stewardship.' Blink.

It continues: 'We will work to ensure that our people, capital and ideas are used to help find effective market-based solutions to address climate change, ecosystem degradation and other critical environmental issues, and we will seek to create new business opportunities that benefit the environment.' Blink. Blink.

Finally, amidst a raft of other promises, aims and objectives, the company commits to establishing and funding a Centre for Environmental Markets.

If this is for real (which it seems to be) then it is in no small way attributable to a diminutive non-profit organisation. The Rainforest Action Network (RAN) – started by Randy 'Hurricane' Hayes in 1984 – occupies two floors of a non-descript office block in downtown San Francisco, employs just 28 members of staff and is trying to save the planet on donations of \$2.4 million a year.

Six months ago they received a call from the communications director at Goldman Sachs wanting to talk. They were interested, he said, in coming up with an environmental policy and needed advice. For Mike Brune, executive director at RAN, it was the turnaround they'd been looking



RAN, through their recent campaign, Jumpstart Ford, is demanding that the car company raise fuel efficiency to 50 miles a gallon fleet average by 2012.





for. 'It was the first time a Fortune 500 company had come to us,' he says, 'instead of us chasing them.'

### Secret of our success

According to Hayes, the methodology of their campaigns has its roots in the Burger King Boycott of 1986. 'We contacted Burger King and told them that the beef they were importing from Central America was directly responsible for pristine rainforest being felled to make way for cattle farms.'

'They didn't respond. We got the classic corporate cold shoulder. So we hit the streets with the basic formula of grass roots action – combining non-violent civil disobedience with a lot of colourful street theatre, including a life-size papier-mâché cow with two people inside that was being fed rainforest leaves and defecating huge Styrofoam whopper burgers.'

It took 18 months of lunchtime demos outside Burger Kings around the country before the company cancelled a \$35 million contract for rainforest beef with Costa Rica. 'The cattle industry was shell-shocked,' grins Hayes, 'and the campaign triggered a worldwide focus on the significance of the rainforests.'

In their next breakthrough campaign against DIY giant Home Depot in 1989, they had activists turning up at stores carrying clip boards and dressed in white coats with 'Old Growth Inspectors' written on the back and leaked in-store intercom codes were used for customer announcements such as 'Attention all shoppers. The wood in aisle 2D is ripped from the heart of

the Amazon. Do be careful of any spilt blood on the floor as we do our bit to destroy the earth.' Approximately a year later, Home Depot told its suppliers it wouldn't buy wood unless it was FSC certified, slashed imports from both Indonesia and Gabon – both notorious for illegal logging, and helped broker a deal between loggers and environmentalists in Chile to prevent the felling of native forests.

'Much more effective than a bunch of hippies saying "Please stop logging",' grins Hayes. 'They're such a major buyer it effects far greater change – there were ripple effects across the whole industry.' Several huge US retailers followed suit including Office Depot and giant stationers Lowes.

Leverage from Home Depot was also partly responsible for the permanent protection of 35 per cent of pristine rainforest in British Columbia. 'It was a milestone for RAN,' says Brune, 'but the issue is not over. We only have protection for a third.'

### A change of direction

RAN began their Global Finance Campaign because they needed to find ways of being more effective. 'We began to realise that it was just too much hard work getting what we wanted directly from the logging companies or extraction industries,' says Hayes.

'Whether it's hydroelectric dams in the Amazon or pipelines in Peru, the developers have to get their money from somewhere, so if we could get the banks to stop funding the bad and start funding the good then we could get some real leverage.'

They started with Citigroup – the world's largest financial institution – in 2000. Citigroup is perhaps their longest and most challenging campaign to date. It took over four years to bring the company to 'one bended knee' and they used every single trick in their non-violent toolbox of persuasion.

The campaign was personal from the start. In 2000 on the eve of the Johannesburg Summit on Sustainable Development in 2000, they targeted CEO, Sandy Weill. He was in Europe eating breakfast when he opened a copy of the *International Herald Tribune* that contained a full page 'Wanted' advertisement with his photograph next to George W. Bush and John Wolfensohn, president of the World Bank, labelling him an environmental villain.

Two years later, Weill was confronted by students protesting his bank's record during a talk he was giving at his alma mater Cornell University, to which he had given a personal donation of \$100 million. Days later a devastating ad campaign began that had celebrities like Susan Sarandon

and Ali McGraw cutting their Citi credit cards in half on television to the sound of chainsaws. Over 20,000 people cut up their credit cards and sent the plastic shards back to the company. This coincided with some financial scandals and plummeting share prices.

Citigroup raised the white flag by agreeing to stop arranging financing for a pipeline project in Peru as long as RAN agreed to a moratorium on their activities. And within a year of the agreement Citi had broken off a historic relationship with one of the most notorious illegal loggers in South East Asia – Rimbulan Hijau from Malaysia – which were embroiled in human rights abuses and rainforest devastation in Papua New Guinea.

‘Is CitiGroup a good ecological force in the world? No, it’s not,’ says Hayes. ‘But do we have them looking seriously at decreasing how much harm is being done and increasing funding for renewable energy and certified logging? Yes, we do.’ Now Citigroup has five members of staff who exclusively deal with environmental research and decision-making in the deals that they do.

**A mosquito in the tent**

*Fortune* magazine compared RAN to ‘a mosquito in the tent’ and they’ve never allowed their size to dictate the size of their targets. Burger King, Home Depot, Kinko, Lowes, the giant loggers Boise Cascade, Mitsubishi, Citigroup, Bank of America, JP Morgan Chase have all capitulated (at least, in part) to RAN’s demands for environmental responsibility and this is creating a ripple effect throughout corporate America as associated suppliers and sister companies follow suit.

It is a testament to the formula that RAN has never once lost a campaign, a remarkable record given the limitations of their size and budget. Why have they been so successful?

‘We’re very tenacious,’ says Brune. ‘Once we sink our teeth into a company, we don’t let go. We’re also very creative and we don’t go it alone. We have relationships with various other grass roots organisations which all come on board.’

‘Also public opinion is on our side. There may not be many groups confronting corporate America right now but, on the streets, there’s a profound dissatisfaction with the administration and a hunger to hold corporations accountable.’

Hayes continues, ‘There are plenty of transnationals that know we can damage their brand; that we can reach their employees and shareholders and say, “Did you know your company is involved in destroying the rainforests or the destruction of indigenous peoples? Is this what you want from your company?”’

Both Brune and Hayes enjoy the stunts and

the notion of being ‘barbarians at the gates’ but, uniquely for most radical organisations of their ilk, they are also willing to work with corporations and advise them on policy and celebrate corporate leadership where they see it. It’s a strategy that undermines the critics who claim that RAN is an inherently anti-capitalist, anti-business organisation.

‘Far from it,’ says Ilyse Hogan, director of the Corporate Campaign. ‘We forget corporations are made up of human beings, many of whom have children and who are as concerned with the future of the planet as we are. Also, the people at the top of these companies don’t get there by accident: they are some of the brightest, most creative minds in business, so we often find that once we’ve alerted them to the actualities of the issues, the brutal facts, many of them can become very motivated.’

‘I think what we do really well is command the attention of decision makers.’

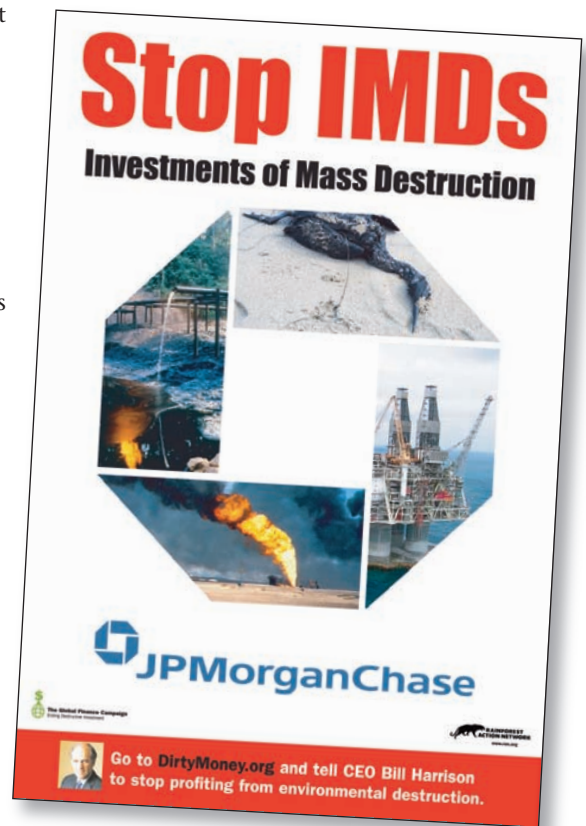
Hayes always insists on the involvement of the CEO and when any other lesser beings are presented RAN will walk away from the table: ‘If it’s a question of getting things done, we have to have support at the highest level.’

Goldman Sachs is blessed with CEO Hank Paulson, who also happens to sit on the board of Nature Conservancy. ‘He’s our most committed chairman to date,’ says Hogan. ‘There’s a real interest there, it just took him a while to realise that both the roles he held were interlinked.’

Goldman Sachs were also quite badly burned by a grass roots campaign in 1998 when they were involved with Petro-China, where they were taken on by Tibet activists and labour unions.

But Hogan insists their enthusiasm is also an indication of how new values and ethics are transmitting through the sector. ‘Goldman Sachs have a serious reputation for anticipating trends in the market place so they’ve been watching what’s going on. The thing is that having an environmental policy is no longer

‘So we hit the streets with two people inside a life-size papier-mache cow that was being fed rainforest leaves and defecating huge Styrofoam whopper burgers’





revolutionary; it's expected at this point and this is a company that likes to be ahead.'

But how can they be sure that companies are not simply paying lip service to eco-ethics for some good PR and to keep RAN off their backs? In other words, how do they know that when they give glowing praise to a multinational for going green that they will stick to their word when all agreements are entirely voluntary and non-binding?

'It's true that when the spotlight moves from one company to another, the pace of implementations usually slows,' says Brune, 'so our challenge is to continue to act as task masters and continue to persuade and push and threaten and reward and motivate them to implement their policies in good faith.'

He admits it can be overwhelming to hold all of them accountable at once, but claims broad partnerships with other NGOs – Forest Ethics, EIA, Bank Trake Europe, WWF and Friends of the Earth to name a few – means that if a company is slacking someone will pick it up.

For example, Brune recently received a report from EIA about corruption and illegal logging in Honduras by a supplier to Home Depot, so RAN will now approach Home Depot with the report and push them to either engage with the company to improve practises or drop them altogether.

Hogan mentions that they are currently concerned with Bank of America's activities in the Canadian boreal forests and is talking about re-starting the campaign against the bank. 'We're having doubts about their engagement. They've committed to stop funding that would degrade intact forests and specified the boreal, but we don't even think they've done a full mapping of their impact on the area. It's their first project and they've hardly moved forward at all.'

Hogan believes that publicity about a company's green shift acts as an incentive on implementation because they have to stick to their word, but she admits that they are taking a risk

when they publicly congratulate a company. 'It's a risk of faith when we are moving from enemy to friend. Our personal integrity is involved so we make those judgements very carefully. The only thing that brings comfort is knowing that if a company doesn't honour their commitments, we'll resume a very public and aggressive campaign.'

And Bank of America is, she says, the exception to the rule. In most cases companies have responded well, using RAN as a resource and being transparent about progress at quarterly meetings when RAN gives them a matrix of goals and time lines. Citibank has begun holding yearly meetings when the CEO briefs the company on past progress and future commitments. 'It's a real indicator of intentions when the CEO is really engaged.'

Their success in the financial sector has persuaded them to attempt another seemingly Sisyphean campaign. Last year RAN began a campaign against Ford Motor Company as their first step to bringing about the end of the combustion engine.

### Jumpstart Ford

RAN director Jennifer Krill explains why an already over-stretched organisation should consider taking on the most iconic of America's car manufacturers. 'Since 1985 we've been fighting an oil pipeline somewhere. Oil doesn't just come from deserts, it comes from rainforests too. Nigeria should be a pristine rainforest, Columbia, parts of Brazil, Venezuela have all lost forests to oil extraction.'

'In the best case scenario we might chase a company out of a project; for example we got Oxidental Petroleum out of Columbia but a Latin American company took over – and we considered that a victory. We had to start looking at the deeper, more intrinsic causes of the oil chain of destruction. And that leads to us tackling oil consumption.'

Krill predicts that Jumpstart Ford will be their biggest, and possibly most influential, campaign to date. And she's in no doubt that they will, eventually, win their case.

'The challenge is not whether we will succeed, but are we going to succeed in time?'

She says. 'We're talking about deep, entrenched issues here, beginning with America's addiction to oil. Cars account for more than 40 per cent of our oil consumption and transportation as a whole accounts for a huge 70 per cent. America has five per cent of the world's population, and consumes over 25 per cent of the world's oil.'

'And this addiction has massive side effects: Oil consumption is the single biggest contributor to global warming and climate change; exploration and extraction has resulted in wholesale

destruction of rainforests and fatal pollution as the result of spills and toxic waste. Finally, it erodes our national security and Americans are beginning to make the connection between our dependence on foreign oil and some of the terrible things that are happening around the world.'

Krill considers 2005 to be a turning point in the American psyche: with crude reaching a new high of nearly \$US60 a barrel, ordinary people are feeling the pinch at the pump and are, for the first time, making the link between oil dependence and the devastating war in Iraq.

'People are demanding fuel efficiency above safety technology,' claims Krill. 'Toyota Hybrids are outselling gas-guzzling Hummers by four to one. Consumers are really beginning to wonder whether or not we can afford what is a very dirty habit. But Ford is in deep denial.' She laughs, and starts talking the 12-Step language of Alcoholics Anonymous. 'They haven't yet reached the first step of realising their own addiction to oil. They've admitted that climate change is a problem, but that's like admitting alcoholism is a problem. We're not expecting Ford to go cold turkey; but they need to admit they have a problem and start taking steps to do something about it.'

RAN has targeted Ford because Ford's vehicles have had the worst average fuel economy of all the major US automakers for the last five years. 'Ford is the worst of a bad bunch. They may not be the biggest and General Motors produces more smog-forming pollutants, but Ford's terrible record on fuel efficiency speaks for itself.'

RAN has already given Ford their benchmark demands: Fuel efficiency of 50 miles a gallon fleet average by 2012, and zero emissions across the board by 2020. 'We're asking a lot,' Krill admits, 'but it isn't rocket science. They have the technology, they just claim it's too expensive and that consumers won't support it.'

Meanwhile, Ford claims it's doing all it can to be environment friendly. They point to the launch of the first hybrid SUV on the market; the Escape has been widely advertised in mainstream newspapers and green, alternative publications like *Mother Jones* and the *Sierra Magazine*. Krill snorts with derision: 'They made 20,000 of these cars. How many Mustangs do they make a year? How many Explorers do they sell every year? 600,000? 800,000?'

'No wonder they say the technology is too expensive or they don't have the market – 20,000 is a derisively small number in an industry where profits require economies of scale.'

RAN believes that Ford is using the new Escape to give the company a green tinge without any real commitments to change. 'If you were to listen

to Bill Ford,' says Mike Brune, 'you would think that he had just come from a RAN training camp. What he says is fantastic and what he actually does is abysmal. His leadership has actually led to a decrease in fuel efficiency.'

But RAN is stepping up the campaign exponentially. In early April last year there were 160 demonstrations on one day; they aim to double the number in the autumn. Some dealers have practically joined the activists, writing into head office telling the suits, 'We can't sell vehicles that are gas guzzlers any more. Our market share is decreasing, we feel as though we're driving in reverse.'

On July 4th, RAN's 'Declaration of Independence from Oil' campaign received a broad media profile with its picture of the Statue of Liberty wearing a gas mask and surrounded by clouds of pollution (another one with the statue with a gun at her head in the shape of a petrol pump nozzle was shelved) and by the end of year profits had taken a hit.

'We'd love to count Bill Ford as a true ally,' continues Brune, 'a leader who will transform his company and promote American innovation and ingenuity to promote clean jobs, clean air and a

'There's a profound dissatisfaction with the U.S. administration and a hunger to hold corporations accountable'

## CAMPAIGN METHODOLOGY

**RAN applies a basic good cop/bad cop methodology to their campaigns that goes something like this:**

1. Write a letter to the CEO and Board of Directors alerting the company to the fact that their company is causing serious ecological and/or social damage.
2. Write another letter alerting them to the fact that RAN will begin a consumer campaign against the company if they do not receive an adequate response.
3. Begin a letter-writing campaign to the company; post a notice on the website about the specific damage the company is causing.
4. Step up the campaign: take ads in major newspapers personally accusing the CEO of being an 'environmental villain'. Disrupt AGMs. Hang banners from tall buildings highlighting environmental crimes. Mobilise campuses and grass roots organisations to organise boycotts of the company's products and services. Organise high media profile demonstrations.
5. Write a letter to the company listing what they need to do to end the campaign and suggest that they meet with members of RAN to thrash out an environmental programme.
6. If there is still no response, step up the campaign with every non-violent tool in the toolbox and continue to do so – relentlessly – until the company raises the white flag.
7. Organise a meeting and, if the response seems genuine, call off the campaign and advise the CEO and Board of Directors on a far reaching, long term environmental policy.
8. Publicly congratulate the company for becoming environmental leaders.
9. Continue to monitor company progress and if the company reneges on agreements, begin the campaign all over again.



healthy planet. We want to see the Ford of the future selling even more cars because they are innovative, green cars and Ford was the first to start producing them voluntarily – ahead of the game.'

Krill continues: 'I think that was another reason we approached Ford. Henry Ford gave birth to the American auto industry at the turn of the twentieth century. We are hoping that his descendent Bill Ford can display similar vision and courage. He's the most powerful man in the auto industry right now; the ball is in his court. But we need more than just rhetoric. We need timelines and targets. Real commitment.'

'There are positive signs,' she admits. 'The hybrid Escape is out of the door; it's a union-made, fuel-efficient SUV – the first on the market. Problem is, they only made 20,000 of them.'

**No permanent victories, only permanent failures**

David Browers, founder of the modern ecology movement, said there were no permanent victories, only permanent failures. In other words, once a forest is felled, a valley damned, a water meadow built on, it's all but impossible to bring them back.

The activists at RAN constantly live in the midst of limitations. Although delighted with the Goldman Sachs deal, Hogan is frustrated by how far they still have to go, 'Every time we achieve an agreement we learn from it. We should've pushed Citibank much harder on climate change, for example, but then we did get Morgan Chase to take a lead on that. But we're still waiting for a bank to categorically refuse money to a client because they're not playing their role in responsibility. Imagine if Citibank or Goldman Sachs said to someone like Exxon Mobile, "Actually, until you get serious about climate change; stop promoting junk science and move more towards renewables, we can't give you any money. Now that would be something."

'But we recognise obvious constraints limiting what any CEO can do: ultimately it's a business, so they have to show returns and look at the bottom line. All we can do is push them beyond the existing infrastructure of decision-making and show them how, within their realm of influence – which is huge – they can maximise the potential of the financial marketplace in making the world a safer place.'

'We're not looking for these guys to save the world, but we are asking them not to be part of the problem and hopefully come up with some solution.'

Brune points out that RAN is essentially doing the job that government should be doing and that, although they may be helping to reduce the

ecological footprint of corporations, they haven't begun to approach the issues related to corporate power. 'We are making progress where government has failed, the challenge over the next decade is to light a fire under our political leaders to do their jobs.'

Climate, he says, could be the lighter fuel. 'It's pushed us into a new realm,' he says, 'as the walls between the economy and ecology have started to crumble.'

For now the political establishment seems only to be interested in muzzling criticism.

### Home of the brave

When Boise Cascade, the huge logging giant, sent a letter to RAN's funders claiming, according to Brune, 'that we were an anti-capitalist, anti-American, anti-business, illegal, immoral, radical, dangerous, socialist, communist, pot-smoking, draft-dodging bunch of hippy freaks', the vast majority of their donors were supportive. In fact, many doubled their contributions, writing to Boise and saying something along the lines of 'if RAN had made the largest logger of old growth forests that upset, then they must be doing a good job.'

However, RAN is now under investigation from Congress. The House Ways and Means Committee have subpoenaed them to hand over every document and piece of footage relating to every protest they've done since 1993 in order to investigate whether they are entitled to their tax-exempt status. RAN handed over hundreds of documents and video footage on May 31st. They're waiting to see if they will be called to testify.

'They're doing it from the standpoint that non-violent civil disobedience is a law breaking activity and therefore shouldn't be funded by tax-exempt donations,' says Hayes, who points out that RAN has always been publicly and emphatically against property damage or violence. 'However, if it were the case that what we're doing is illegal, then they'd have had to shut down the churches of Martin Luther King and the civil rights movement.'

The subpoena has taken a fair amount of time and money to comply with, especially as RAN took the precaution of removing every name and face from the material to protect members from the possibility of a witch hunt.

'We decided to comply because we're proud of what we do, but it's been a distraction,' Brune admits. 'We can only hope it might be an opportunity to raise issues that the administration continues to ignore.'

Hayes considers it a very worrying development. 'What happens if they manage to revoke our tax-exempt status? It's a direct attack on NGOs that would irrevocably weaken any critics

of the administration who are exposing the social and environmental costs of capitalism.' It is ironic that, at a time when Wall Street may be waking up to the value of environmental sustainability, Washington is seeking to muzzle one of its prime advocates.

For the time being, Brune admits, all they are managing to do is apply 'band aids on a gaping wound' but insists that working with – as well as against – corporations is the only way forward.

'Citigroup alone could be transformative in illegal logging globally,' he claims. 'They alone could bring about better mining standards and they could be a catalyst for evaluation risk and carbon exposure. And that is only one company. Add JP Morgan and Home Depot and we are seeing real results.'

Hayes admits they're ambitious but they have to be in order to, as he puts it, shift the 'fundamental architecture of the economy'. They talk about the Great Ecological U-Turn espoused by the late David Browers, founder of the modern ecological movement, who believed that at a certain moment – when we were looking over the abyss – there would a quantum shift in thinking that would bring about profound systemic change to the way we deal with food, energy, transport and manufacturing, changes that would then bring about an ecologically sustainable society in our lifetime. Hayes admits they've only taken baby steps towards that goal.

'We haven't had sufficient effect yet. I don't need to tell you that we are in real trouble. It's a triage mentality right now. The next few decades are going to be full of chaos and increasing social and ecological turmoil, but we have to have a plan commensurate with the scale of the problem. We can't afford to have slow solutions to fast problems and that's what we've seen in the last few decades of environmentalism: it's been a heroic effort, but the incremental changes just haven't worked.'

'Ultimately we have to ecologise capitalism, but for now if we can dramatically decrease the capital going into illegal logging and gas guzzling cars then we can at least buy some time for deeper change.'

■ Nicola Graydon is a freelance journalist

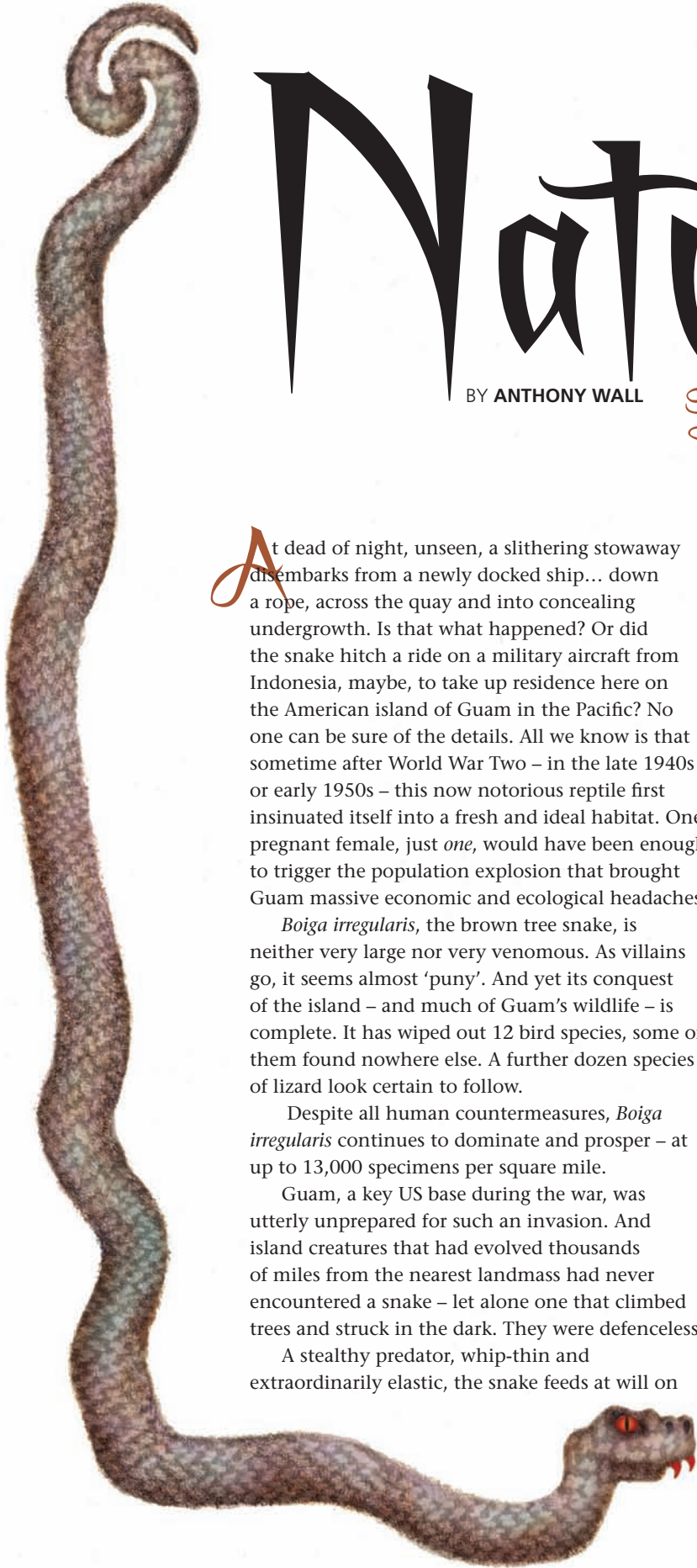
'The challenge is not whether we will succeed, but are we going to succeed in time?'

# Nature

Lessons from

BY ANTHONY WALL

Episode 4 - Snakes...



At dead of night, unseen, a slithering stowaway disembarks from a newly docked ship... down a rope, across the quay and into concealing undergrowth. Is that what happened? Or did the snake hitch a ride on a military aircraft from Indonesia, maybe, to take up residence here on the American island of Guam in the Pacific? No one can be sure of the details. All we know is that sometime after World War Two – in the late 1940s or early 1950s – this now notorious reptile first insinuated itself into a fresh and ideal habitat. One pregnant female, just *one*, would have been enough to trigger the population explosion that brought Guam massive economic and ecological headaches.

*Boiga irregularis*, the brown tree snake, is neither very large nor very venomous. As villains go, it seems almost 'puny'. And yet its conquest of the island – and much of Guam's wildlife – is complete. It has wiped out 12 bird species, some of them found nowhere else. A further dozen species of lizard look certain to follow.

Despite all human countermeasures, *Boiga irregularis* continues to dominate and prosper – at up to 13,000 specimens per square mile.

Guam, a key US base during the war, was utterly unprepared for such an invasion. And island creatures that had evolved thousands of miles from the nearest landmass had never encountered a snake – let alone one that climbed trees and struck in the dark. They were defenceless.

A stealthy predator, whip-thin and extraordinarily elastic, the snake feeds at will on

unsuspecting forest birds. Some may be nestlings, others adults incubating eggs. None can elude this relentless night hunter. Its poison, though mild, is effective and is delivered from fangs at the back of the mouth and by methodical chewing.

Once every bird has gone, *Boiga irregularis* will no doubt increase its intake of lizards. And should these run out, it can concentrate more on rodents such as rats. The brown tree snake is not a fussy eater.

For years, its silently spreading colonisation was hardly noticed by the island's human inhabitants – perhaps because it is nocturnal. But the signs were there to be read: a sudden scarcity of birds and lizards, an unprecedented boom in the numbers of their prey – spiders and other creepy-crawlies (too small a mouthful to interest a snake).

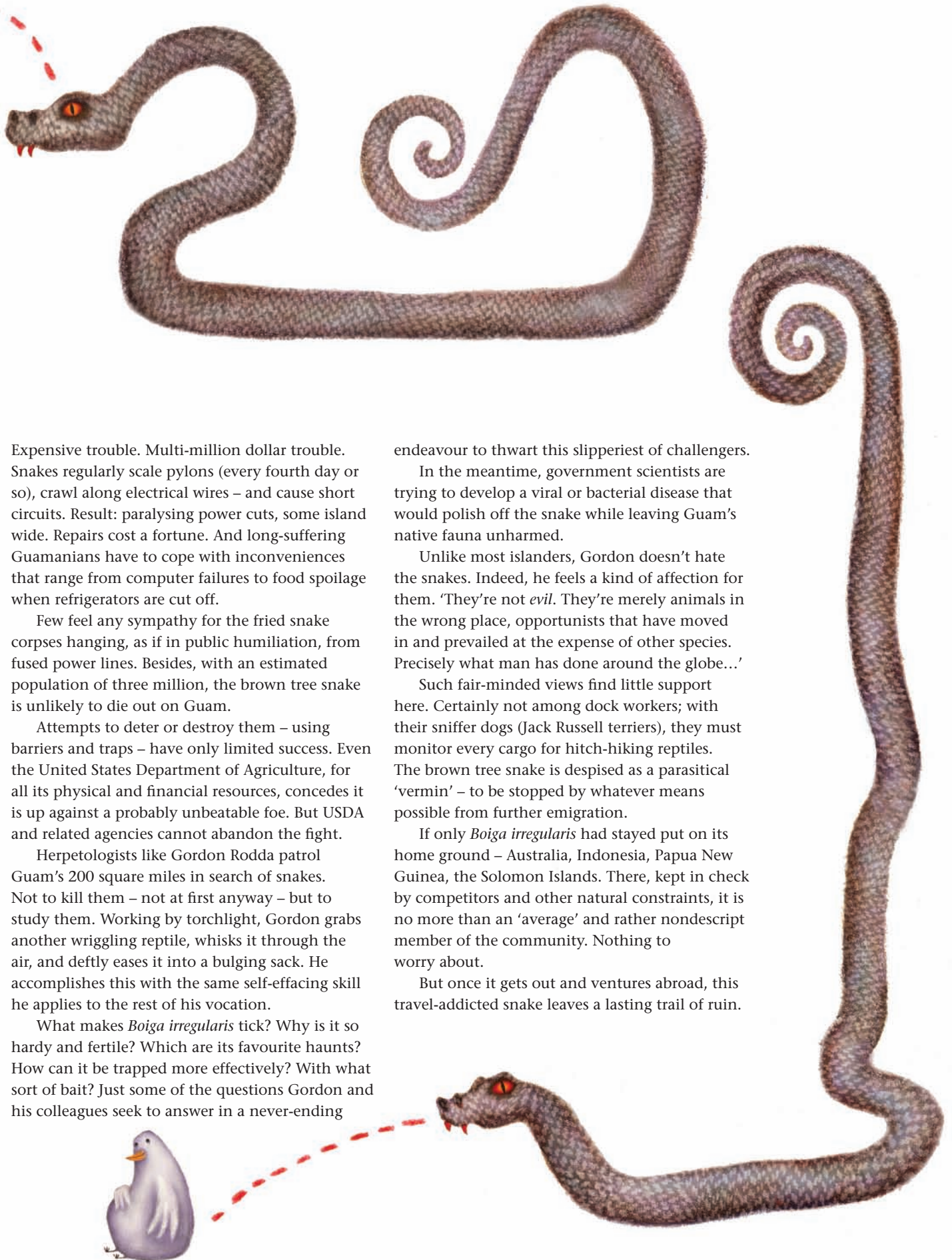
By the 1980s, however, nobody could overlook the multiplying reptiles. They appeared everywhere, indoors and out, an omnipresent pest able to do all kinds of harm. Pet rabbits, puppies, even piglets were added to the snakes' menu.

Then came the first human casualty: a six-month-old girl, bitten while she lay in her cot. She was saved by prompt hospital action. So far, no one has died from the venom of *Boiga irregularis*. But people have learnt to be wary, checking bathrooms, beds... The snake can be aggressive if disturbed, perhaps when scavenging for edible scraps in dustbins at night.

Furthermore, these detested reptiles bring trouble in other ways you wouldn't dream of.



ILLUSTRATION BY LISA EVANS



Expensive trouble. Multi-million dollar trouble. Snakes regularly scale pylons (every fourth day or so), crawl along electrical wires – and cause short circuits. Result: paralysing power cuts, some island wide. Repairs cost a fortune. And long-suffering Guamanians have to cope with inconveniences that range from computer failures to food spoilage when refrigerators are cut off.

Few feel any sympathy for the fried snake corpses hanging, as if in public humiliation, from fused power lines. Besides, with an estimated population of three million, the brown tree snake is unlikely to die out on Guam.

Attempts to deter or destroy them – using barriers and traps – have only limited success. Even the United States Department of Agriculture, for all its physical and financial resources, concedes it is up against a probably unbeatable foe. But USDA and related agencies cannot abandon the fight.

Herpetologists like Gordon Rodda patrol Guam's 200 square miles in search of snakes. Not to kill them – not at first anyway – but to study them. Working by torchlight, Gordon grabs another wriggling reptile, whisks it through the air, and deftly eases it into a bulging sack. He accomplishes this with the same self-effacing skill he applies to the rest of his vocation.

What makes *Boiga irregularis* tick? Why is it so hardy and fertile? Which are its favourite haunts? How can it be trapped more effectively? With what sort of bait? Just some of the questions Gordon and his colleagues seek to answer in a never-ending

endeavour to thwart this slipperiest of challengers.

In the meantime, government scientists are trying to develop a viral or bacterial disease that would polish off the snake while leaving Guam's native fauna unharmed.

Unlike most islanders, Gordon doesn't hate the snakes. Indeed, he feels a kind of affection for them. 'They're not *evil*. They're merely animals in the wrong place, opportunists that have moved in and prevailed at the expense of other species. Precisely what man has done around the globe...'

Such fair-minded views find little support here. Certainly not among dock workers; with their sniffer dogs (Jack Russell terriers), they must monitor every cargo for hitch-hiking reptiles. The brown tree snake is despised as a parasitical 'vermin' – to be stopped by whatever means possible from further emigration.

If only *Boiga irregularis* had stayed put on its home ground – Australia, Indonesia, Papua New Guinea, the Solomon Islands. There, kept in check by competitors and other natural constraints, it is no more than an 'average' and rather nondescript member of the community. Nothing to worry about.

But once it gets out and ventures abroad, this travel-addicted snake leaves a lasting trail of ruin.



# EUROPE'S HI-TECH FUTURE THE LAST COLONIAL DELUSION

As the bulk of the hi-tech sector sails off to the east, it's time the EU took a stand in rediversifying both national and local economies for future prosperity.

CAROLINE LUCAS MEP AND COLIN HINES REPORT, ILLUSTRATION BY ADRIAN TEAL

*'Global Europe must be outward not inward looking, focused on external competition, and adjust its social model to combine flexibility with fairness. And we should recognise that with China and India not only leading in low-cost goods and services, but producing four million graduates a year, the new race is not to the bottom but to the top. Wholesale economic reform must help Europe raise its game where it matters – in high technology, high skill, high value-added goods and services.'*

**Gordon Brown, Why it is make or break for European social reform,**  
*Financial Times* October 13 2005

*'Green Party MEP Caroline Lucas asks what Europe will be able to export in future,*

*given competition from India and China. A large part of the answer lies in services. As the economies of India and China grow, so will their demand for services from Europe.'*

**Christopher Roberts, Chairman,  
European Services Forum**

*Financial Times* Letters October 18 2005

The unsubstantiated assertions made above typify the delusion of European politicians, businesspeople and commentators alike – that Europe can out-compete China and India and at the same time solve its economic and employment problems by moving to hi-tech exports. It is endlessly claimed that more education, retraining, research and development, allied with labour

'flexibility' and 'affordable' levels of social provision will enable us to triumph on the world trade stage by selling more hi-tech goods and services. This strategy is also supposed to help compensate for the damage caused by domestic industrial decline, increasing company relocation and cheap imports.

Yet the United States, with its far more ruthless and cost cutting economic policy framework, is failing in this attempt and, in the process, conditions are worsening for huge numbers of its people. What chance for Europe, which is attempting both to keep its present much discussed 'social model' while trying to compete successfully with low wage, high skilled Chinese and Indian workers?

The answer is that Europe is simply trying to achieve the impossible, and the sooner politicians, business people and economists wake up to this, the sooner a meaningful public debate can begin about how the free market model should be replaced by one that protects and rebuilds economies as well as social and environmental conditions worldwide.

Harvard economist Richard B Freeman has observed, 'What is stunning about China is that for the first time we have a huge, poor country that can compete both with very low wages and in hi tech. Combine the two, and America has a problem.' The EU has a problem, too.

**Europe's hi-tech sectors threatened**

'If we think that the competition from emerging economies such as China and India is simply about low wages and manufacturing, then we are kidding ourselves. These countries are also competing with us in hi-tech, high-skilled sectors because they are investing more and more in research and innovation.'

*Janez Potocnik, EU Science and Research Commissioner, October 12th 2005*

Fifteen years after US and European multinationals started shipping large numbers of manufacturing jobs overseas,

experts are saying that the 'second wave' of off-shoring is beginning; one that will be bigger and more disruptive to the European and US job markets than the first. Substantial numbers of skilled, reasonably well-educated, middle-income workers in service-sector jobs, long considered safe from foreign trade – eg accounting, law, financial and risk management, health care and information technology – could be facing layoffs or serious wage pressure as developing nations perform increasingly sophisticated off-shore work. A study by the US consultancy firm McKinsey Global Institute estimated that 4.1 million service jobs will have been lost by the rich nations by 2008.

The Organisation for Economic Co-operation and Development (OECD) recently analysed how many European jobs could be affected by service-sector off-shoring. The study found 15 at-risk job categories – among them clerks and keyboard operators, engineers and architects, mathematicians and statisticians, chemists and physicists – representing 19 per cent of total employment in the pre-enlargement EU.

At present India is the preferred destination for the relocation of hi-tech work such as computer programming and embedded software and design for cars, involving companies such as IBM, General Motors, Daimler Chrysler Toyota, Ford Motor, Ferrari, and Honda. As a result, there are already more information technology engineers in Bangalore (150,000) than in the US computer centre Silicon Valley (130,000).

Although information

technology and call-centre jobs were the first to move to Asia, the trend is now spreading to a range of tasks that are information-based or highly skilled, including claims processing and financial analysis for tax departments, banking, insurance, financial services, and hi-

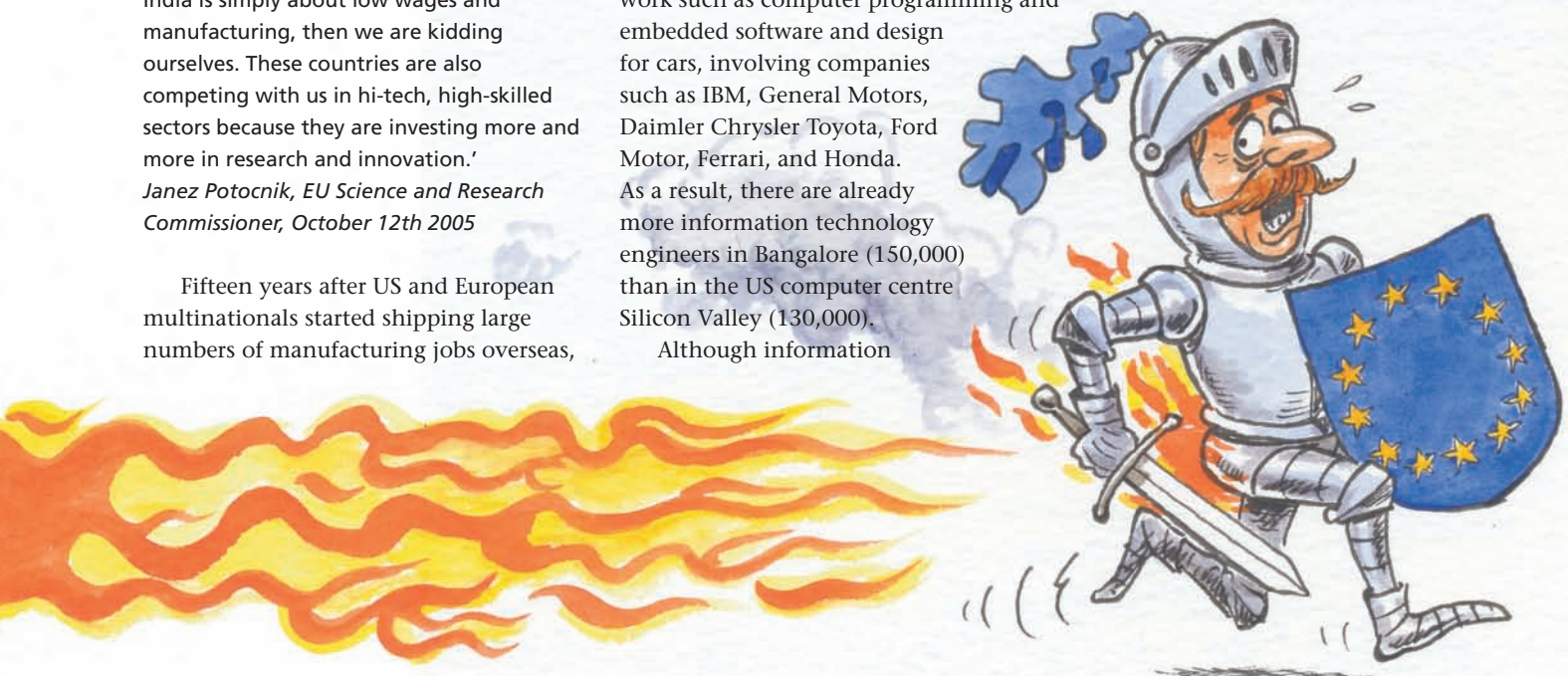
tech engineering. Professions once thought to be safe and unlikely to be outsourced, such as the media, tutoring and medical provision, architecture and the law are beginning to be transferred to Asia:

- Bank of America (BoA), the second largest bank in the US, has outsourcing centres in India to undertake market

research for its global capital markets and investment banking divisions, and to deal with the bank's corporate and consumer accounts.

- Engineers in India are involved in the custom design of automated factory equipment for big US drug and packaged-food makers.
- Reuters, the news service, is outsourcing US editing and caption writing of photos to Singapore.
- Even Electronic Arts, the US video game maker, is debating how much of its work it can move to lower-cost regions in the future.

An office lobby in DC uses a 'virtual secretary' based in Karachi, Pakistan to answer phones and order sandwiches – all via a flat screen hanging on the wall



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- Companies like Growing Stars and Career Launcher India in New Delhi provide 'homework outsourcing' – charging American students \$20 an hour for personal tutoring, compared with \$50 or more charged by competitors in the US.
- India's hi-tech 'medical tourism' hospitals provide hip replacements for less than half the cost in the US, even allowing for airfares.
- An office lobby in Washington DC uses a 'virtual secretary' based in Karachi, Pakistan to answer phones, order sandwiches, greet employees and deal with visitors – all via a flat screen hanging on the lobby's wall.

### China begins to catch up with India

However, India's dominance is now being challenged / threatened. Microsoft is teaming up with the Indian outsourcing firm Tata, and the Chinese government, to form a software company in Beijing. This joint venture will provide technology-outsourcing services both for the global market and for China itself. The project will begin in 2006, and confirms China's growing hi tech role. The joint expertise involved is expected to help China catch up more quickly with India, its major Asian competitor in this field. Tata has already been in China for three years, establishing an engineering centre in the eastern city of Hangzhou and collaborating with several Chinese universities.

Indian companies such as Tata have set up in China to keep their prices low

and to gain access to the large number of technology graduates available there. However, perhaps with more prescience than sour grapes, Vivek Paul, outgoing president and vice chairman of a rival Indian off-shoring firm Wipro, has warned that in forming partnerships in China, Tata may be hurting itself by 'breeding its future competition'. American commentators have predicted that the Microsoft deal could accelerate the flow of skilled technology jobs from the United States overseas.

Companies based in China will pose a huge competitive challenge in the future, since labour there is, and will remain, very cheap, and is becoming increasingly well qualified:

- Urban population growth will provide a huge pool of permanent cheap labour – with an estimated growth rate of 2.5 per cent per year (versus 0.8 per cent for India), the Chinese government expects 300 million people to move to its cities and towns between 2004 and 2020.

- Research investment in China is growing by 20 per cent a year while in Europe it is stagnating. The share of Chinese GDP devoted to R&D is growing 10 per cent annually while in the EU it is only rising by 0.02 per cent.

- Around 15 to 20 per cent of China's exports are already classified as

hi tech. China has two million graduates a year, 250,000 of them are engineers and 50,000 are new technology graduates.

### Reasons for China's growing share of global high-tech exports

'The China Price: They are the three

scariest words in US industry. In general it means 30-50 per cent less than what you can possibly make something for in the US. In the worst cases, it means below your cost of materials.'

### THE CHINA PRICE: A SPECIAL REPORT ON CHINA, BUSINESS WEEK, DECEMBER 6 2004

The economic importance of China to the EU is shown by the fact that two-way trade has increased more than forty-fold since reforms began in China in 1978, and was worth €175 billion in 2004. In 2003, China and the EU became each others' second largest trading partners and, whereas the EU enjoyed a trade surplus with China at the beginning of the 1980s, EU-China trade relations are now marked by a large and growing EU deficit with China – reaching worth €78 billion in 2004.

There are good reasons for European and US industry to worry about the likely and rapid future dominance of China in all export sectors. Although both have weathered decades of competition from, for example, Japan and Korea, China is different in a number of ways:

- **SPEED:** Earlier rivals usually took years to build up a presence. Chinese competition often seizes share rapidly with unbeatable prices, leaving little time for domestic companies to adjust.

- **BREADTH:** Other Asian nations shed labour-intensive work as they industrialised, but China is gaining share in low tech at the same time as advancing into higher-value areas such as digital electronics.

- **COMPETITION:** Japan and Korea are limited players in many industries, but in China dozens of manufacturers battle for share in the domestic markets for appliances, cell phones, cars – keeping everyone more competitive.

- **ALLIANCES:** Unlike Japan or Korea,

EU-China trade relations are now marked by a large and growing EU deficit with China – which reached 78 billion euros in 2004



China welcomes foreign investment in key industries. Foreign ventures account for 60 per cent of exports and a big share of local sales.

• **SIZE:** China is both an export power and is itself becoming the world's biggest market for cars, appliances, cell phones and more, giving China unparalleled economies of scale.

Chief among its formidable assets is its cheap labour, from \$120 per month production workers to \$2,000 per month microchip designers. Even in sophisticated electronics industries, where direct labour is less than 10 per cent of costs, China's low wages are reflected in the entire supply chain, from components and office workers to cargo handlers.

China's enormous domestic market ensures economies of scale and strong local competition that keeps prices low. It has an army of engineers that is growing by hundreds of thousands annually – young workers and managers who are willing to put in 12-hour days and work weekends. It also possesses an unparalleled component and material base in electronics and light industry, and 'an entrepreneurial zeal to do whatever it takes to please big retailers'.

**The American 'competitive' canary falls off its perch**

Europe is constantly urged to mimic the US 'success story' of open markets, flexibility (ie less worker protection), and less 'business-stifling red tape' (ie regulation), in order to compete with China and India. Coal miners once used canaries to provide an early warning system alerting them to imminent life-threatening conditions. The reality of US hi-tech job losses to Asia should be seen as Europe's 'canary' and provide a modern day warning for those Europeans who fondly imagine that following US neo-liberal policies will be the salvation for new jobs and retaining international competitiveness.

The US software industry lost 16 per cent of its jobs in the three years from March 2001 to March 2004. The number of US students enrolling in computer and engineering courses dropped by 23 per cent between 2002 and 2003, as students realised that they couldn't compete with Indian engineers who currently make about \$13,000 a year.

The latest official projections for new jobs confirm that, far from a future of countless new, well paid hi-tech jobs, what is emerging is a consistent pattern of a US with no net job creation in high productivity sectors. The jobs being created are in lower paid domestic services that cannot be traded internationally.

According to the Bureau of Labor Statistics' 10-year jobs forecast, the majority of US jobs created in the coming decade will be in domestic services that do not require a college education and are lower paid. Of the nine occupations projected to have the biggest growth in coming years – registered nurses, post secondary teachers, retail salespersons, customer services representatives, cashiers, food preparation and serving staff, janitors, managers, waiters – the average pay of five of them is below the poverty line for a family of four.

In 1999 then President, Bill Clinton, announced that former coal jobs in two cities in Eastern Kentucky would be replaced by hi-tech call centre jobs to be opened by the Florida-based Sykes Enterprises, with the help of \$7.6 million in incentives from the state. Sykes trained 3,000 people to take technical calls from

PC users who were having problems. But by the spring of 2004, some 700 jobs disappeared, after Sykes shut down the call centres and opened similar facilities in China, India, El Salvador, Costa Rica and the Philippines.

**Downsides for China  
TNCs dominate China's hi-tech export sector.**

While a quarter of all Chinese export earnings of textile products go to foreign textile companies, Chinese companies do reap the remaining ¾ of export earnings. Generally, however, their average profit rates are low, since the majority of them subcontract to foreign brands, only earning a fraction of value

Chief among China's formidable assets is its cheap labour, with \$120 per month production workers willing to put in 12-hour days

added, often just 10 per cent. Importers like Wal-Mart and brand companies take the major share of profit. Moreover, between 1996 and 2001, China itself lost nearly four million textile jobs in the race to remain competitive and those who retained their jobs saw their wages cut.

The dominance of foreign firms in China is, however, even more apparent in advanced industrial exports. According to the most recent Chinese government statistics for hi-tech industries (pharmaceuticals, aircraft and aerospace, electronics, telecommunications, computers, and medical equipment), the role played by foreign companies is far greater than that of textiles, being responsible for 85 per cent of hi-tech exports by 2002.

Not only is much of the profit repatriated, China's desire to attract such companies has led it to demand a lower tax take from these companies than from domestic ones. The competition from foreign companies has also resulted in



## EUROPE VERSUS CHINA

tens of millions of job losses from China's domestic companies, which are unable to compete with these new entrants.

### Social costs

Foreign competitors complain that China's competitiveness is built on unfair trade practices, in particular its failure to respect minimum social and environmental standards. This certainly seems to be at least partially the case, but Chinese workers are the real victims. For example, although China has very strict laws about the obligations of employers to protect their workers in dangerous environments, more than 100,000 people a year are estimated to die in work-related accidents.

This is not surprising given that workers are not permitted to establish their own independent trade unions to negotiate working conditions such as wages, and health and safety. Conditions have become so bad that workers have been involved in mass protests in many sectors of Chinese industry, against excessive working hours, low pay, and frequent wage arrears.

China's economic expansion and rapidly growing exports have reportedly resulted in hundreds of millions of Chinese being taken out of poverty, but this wealth is increasingly being concentrated in the hands of a small minority; and their consumption is increasingly oriented towards luxury imported goods. The consumption of luxury goods by China already accounts for 12 per cent of the global total, and is growing at 20 per cent annually. On the other hand, vast numbers of people

are facing stagnant or even decreasing income and diminishing job security, combined with rocketing health care and education costs.

### Environmental costs

In an interview in early 2005, China's deputy environment minister, Pan Yue, said that acid rain is falling on one-third of China, half the water in its seven largest rivers is 'completely useless', a quarter of China's citizens lack access to clean drinking water, one-third of the urban population is breathing polluted air, and less than a fifth of the rubbish in cities is treated and processed in an environmentally sustainable way.

Also because of China's increasing reliance on coal-fired power stations, air pollution has increased. Coal provides 70 per cent of China's energy, leading to major air pollution problems, and contributing further to climate change. Local air pollution from power plants and industrial facilities has reached crisis proportions in most urban areas, and the World Health Organisation has concluded that six of the world's 10 most polluted cities are in China.

If not curbed, the growth of China's carbon dioxide emissions over the next 20 years will mean that China will overtake the US as the top emitter of the greenhouse gases causing global warming. This increase will dwarf any cuts in CO<sub>2</sub> that the rest of the world can make.

### It's not China, stupid, it's the system

China per se is not the problem. It is just the newest, most far reaching and rapid symptom of the failures of a global

trading system that values international competitiveness above the provision of global economic security, social wellbeing and environmental protection. The international rules of the World Trade Organisation (WTO) need to abandon their present socially and environmentally damaging emphasis on forcing open global markets. Although China is the major winner in terms of rapid growth in domestic and export markets, this has been achieved at the cost of more dependence on foreign capital and transnational companies (TNCs), as well as adverse social and environmental costs for the majority.

### Localisation – the hi-tech route for all

Free traders have only one last refuge when peddling their wares to uneasy working people in industrialised countries. Having written off swathes of domestic manufacturing and services such as call centres, these proponents cling on to the vain hope that retraining and retooling for a hi-tech future will enable the West to compete successfully with the likes of China and India. This is the last colonial delusion, and that there is very little that is hi-tech that cannot eventually be provided more cheaply in Asia.

In order for low, medium and hi-tech manufacturing and services to have a future in every country, the world must move away from economic globalisation towards an approach that protects, promotes and sustains the maximum feasible economic diversity – nationally and regionally.

This process has been termed 'localisation' – a set of inter-related and self-reinforcing policies that actively discriminate in favour of the local. It provides a political and economic framework for people, community groups and businesses to re-diversify their own local economies. It has

China has two million graduates a year, 250,000 of them are engineers and 50,000 are new technology graduates



the potential to increase community cohesion, reduce poverty and inequality, improve livelihoods, social provision and environmental protection, and provide the all-important sense of security.

Localisation is the very antithesis of economic globalisation, which emphasises a beggar-your-neighbour reduction of controls on trade, and distorts all economies to make international competitiveness their major goal. Localisation involves a better-your-neighbour supportive internationalism, where the flow of ideas, technologies, information, culture, money and goods has, as its end goal, the protection and rebuilding of local, national and regional economies worldwide. Its emphasis is not on competition for the cheapest, but on co-operation for the best.

Among the policies that have been proposed as part of a long-term package to be gradually introduced to achieve localisation are: the re-introduction of protective safeguards for domestic economies, eg tariffs and quotas; a 'site here to sell here' policy for manufacturing and services domestically or regionally; localising money, so that the majority of it stays within its place of origin; increased democratic involvement, both politically and economically to ensure the effectiveness and equity of the move to more diverse local economies; and, the reorientation of the end goals of aid and trade rules so that they contribute to the rebuilding of local economies and local control worldwide.

The policy mix will obviously vary in practice to some degree from country to country. Some nations such as China and

India are big enough to think in terms of increased self-reliance within their own boundaries, smaller countries would look to a grouping with their neighbours.

**Conclusion: Europe must show a lead**

The EU must divest itself of the fantasy that it can keep its lead in global trading through dependence on hi-tech dominance. In its place the EU must champion the new end goal of re-diversifying national and local economies, so that they provide for society's basic needs in a more equitable and environmentally sustainable way. With that approach China, India, Europe, and indeed all countries will have a chance of achieving the security that their people so clearly desire and avoiding the exploitation of workers, which is an inevitable consequence of the present corporate-led global race to the bottom.

It will, of course, be impossible for such a radical change to be introduced by one country alone. Individual countries will need to co-operate on this project on a regional basis. Regional blocs like the European Union will have a key role to play. Indeed only Europe and North America are politically and economically powerful enough to be a counterweight to overcome the forces that are the major beneficiaries from globalisation — transnational corporations and international capital.

And yet, to date, the Commission's response to the hi-tech threat from China has been both tardy and complacent. It should urgently investigate the extent to which 'the China price' is already affecting EU industries, examine the

level of existing off-shoring, and identify sectors that could be under threat in the future. This data should be used to evaluate the effects of such trends and identify the radical policy responses required.

Finally, the question those in favour of ever-more open markets need to answer in detail is precisely what it is that rich countries will retain in the hi-tech sector that cannot be produced by lower-wage competitors, in particular China?

- Caroline Lucas is Green Party MEP for South-East England.
- Colin Hines is the author of *Localization – A Global Manifesto* and an associate of the International Forum on Globalization.

According to the US Bureau of Labor Statistics the majority of US jobs created in the next decade will be in domestic services





**OPERATION  
LESSER WHITEFRONT**



The Lesser White-fronted or Dwarf geese are the smallest geese in the world and are on the brink of extinction. Luckily for them, they have two humans committed to keeping them alive, Christian and Paola Moullec.

**Bridget Nicholls Smith** tells their remarkable story



**D**uring the migratory season Dwarf geese travel with their bigger brothers the Greater White-fronted geese. Although hunted, the Greaters are thriving, but it's hard to distinguish between the two in the sky through the barrel of a gun, even though the Dwarfs are a protected, non-quarry species. The geese migrate from their breeding grounds in Lapland, either to Eastern Europe or to the Black and Caspian Seas for the winter.

As Christian explains, 'In the countries of south eastern Europe hunters shoot at anything that moves – even in nature reserves. Above all it is a question of the trigger happy French and Italian hunters. It would be suicidal to risk allowing the geese to winter in southern Europe. There is room for them in the west. It is easier to educate the geese than their human hunters. The best, of course, would be for the geese to follow their old routes, but it is impossible with the strong hunting lobbies in Russia and south eastern Europe.'

This is not their only problem. The Dwarf geese have few suitable areas left for resting and feeding during migration and wintering. Much of the habitat at the staging areas along their migratory routes to eastern Europe and areas around the Caspian and the Black Seas are being destroyed, as more and more wetlands are

drained, rivers are canalised and natural grasslands are converted into agricultural, residential or industrial land.

Fifty years ago the whole population of Lesser Whitefronts was estimated at more than 100,000 birds. Now there are less than 20 breeding pairs in the wild. How? Why? It's always the same story: pressure from over hunting, the spread of agriculture, highways, cities and man. The species struck by these multiple onslaughts is failing to adapt and is dying out.

### The parents

Christian Moullec, a French meteorologist and bird lover, was desperate to do something. Given the imminent threat to the 'dwarf' goose, lobbying parliament wasn't an option, he had to act quickly – so he learnt to fly like a goose.

Christian and his wife Paola hatched a plan to teach the geese to fly south on a different route, thereby avoiding the barrage of shotgun pellets, by using the 'microlight method' – an adaptation of the Nobel Prize winning Austrian ethologist Konrad Lorenz's well known imprinting technique.

With the microlight method the human 'foster parents' imprint themselves on the young geese from before they hatch and then train them to follow a microlight aircraft. Because the phenomenon of migration is not totally

instinctive in geese, it is only in the company of adults that the young learn the migration route. Man and machine take on the role of foster parents, leading the birds to a protected wintering ground via a safe route.

The young birds learn the migratory route on their first flight and remember it in subsequent years, passing it down the generations. They are already independent on their first flight back to their breeding area. Having seen the Red-breasted geese change their over wintering grounds over the last few years for reasons of survival, it is assumed that artificially changing a migratory route is not harmful to the birds, rather a new path and habitat are opened to a new generation of geese.

### Operation Lesser Whitefront

Learning to fly was just the beginning of a long and agonising journey that took three years to realise and is still in progress. It was a journey that many believed would be impossible in densely populated Europe, as it had only been achieved once before over the far more accommodating plains of Canada.

From the start of the project Christian and Paola had their work cut out. Christian had to raise some 30 genetically healthy Lesser Whitefront goose eggs that he finally found in Belgium, which were given to him by an amateur rare bird



farm. He then drove them back the 1,000 kilometres in a makeshift incubator to his farmhouse on the remote Cantal Plateau in southern France. Peace and quiet for the fledgling geese.

For the imprinting technique to work, it is essential the goslings perceive the Moullecs as their parents. A few days before they hatch the goslings pierce the air sack in the egg to breathe and communicate. During this time Christian talks to them constantly, and they'd answer 'clack, clack, clack, clack'. This is the moment of imprinting. 'If they can't hear us any more they send out these heart rending peeps and you can't help but respond,' he says. This imprinting period is also the perfect time to introduce the engine noise of the microlight (via a battered old tape player) and a horn, which Christian then relies on to communicate with them in the air.

The Moullecs have been working on the project since 1996 when they first chose to fly with Barnacle geese, a well-established species not dissimilar to the Lessers, whose reactions to the journey could be compared to the threatened goose. After a lot of trial and error, 12 'adopted' Barnacle geese imprinted with Paola and Christian as their parents, and took off and followed the microlight into the air. However, after the successful trip, there was an unfortunate ending. The Barnacles were left in southern

Brittany for the winter with a lot of other migrators. Some municipal employees saw them grazing on a field and thought they make a nice addition to the City Park and promptly clipped their wings. As the Barnacles were not wary of humans this presented no problem.

This was a harsh lesson for the Moullecs to learn for their forthcoming 'big commute'. With the Lesser White-fronted geese they would have to dress in special bird costumes so that their feathered friends would still be wary of the 'evil' Homo sapiens.

### The journey

For the Lesser White-fronted goslings, the Moullecs design a three-month training programme. Right from the off watching the goslings hatch is a very tense time. If they hatch a moment too early or in the wrong way they can die. From the start their characters are well defined, some will hang back and some will take the lead.

At six weeks old it's time for them to learn how to fly. For the Moullecs and their 35 goslings this means travelling to Oster Malma in Sweden. The Moullecs' experiments are only possible due to a fantastic facility common to all migratory birds, their capacity to accurately memorise the place where they learn to fly and to consider it their home territory. While geese aren't native to where they

hatched, they consider themselves native to the place where they flew for the first time. For their whole life they'll go back there to mate, a single journey with their parents is enough for them to memorise their migration route for life. The team have to transport the goslings to Sweden before they learn to fly, otherwise they would not consider it the beginning of their migratory route and the birds are becoming restless wanting to get airborne.

Oster Malma July 10th 1999 and the geese are itching to fly and will do so when rallied by the Moullecs' horn. The Moullecs meanwhile are waiting for clearance from air traffic control. Normal young geese don't have to learn how to fly: co-ordinating their moves for take off, flying in a straight line, slowing down for landings are innate behaviours. But doing that near a microlight is certainly not in their genes. They know nothing about wind turbulence, propeller suction, or the cables that could fell them at the slightest mistake.

Paola, whom the geese seem to trust more than anyone else, can direct the flight from the two-seater microlight and during the months of July and August she and Christian fly around Oster Malma. The geese quickly gain confidence and possession of this territory, which they will soon consider their mating ground.

September 1st and nature, with its signs of autumn, is prodding the

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migrators to leave. They will be leaving with 30 birds, the other five will go back to the Moullecs farm, not strong enough to survive in the wild. However, the young geese won't follow the two-seater microlight unless their mother 'Paola' is onboard. So, not only does Paola have to overcome her fear of flying the longer distance, she will also have to take to the air when four months pregnant.

Three months of training camp have led up to this moment and everything is decided in a few minutes. With minimal authorisation from air traffic control, it's time to go. The microlight takes to the air with the geese following in 'V' formation. The migration has begun.

The geese are not too keen to leave their familiar airspace. So Paola and Christian constantly talk to them. With a full tank of fuel, the microlight can fly for two hours at the goose speed of 50 kilometres an hour, so they have planned 100 kilometre stages. Their first goal is to reach the Baltic Sea and, once there, the navigation becomes childishly simple. Having followed the coast to the south, they then detour through Denmark and lastly south again until Germany to the ornithological reserve of Xanten where the geese are supposed to winter from October to March.

Paola and Christian plan to cover the 1,600 kilometres in 15 stages over three weeks, not allowing for bad weather and provided all else goes to plan. Flying at an elevation of 500 metres, the landscape of forests, rivers and estuaries are engraved in the minutest detail in the bird's memories. These are the landmarks they will call up for their return migration. These travellers are not only endowed with remarkable vision and memories, they also possess nerve cells sensitive to the magnetic north that work like a compass. The position of the planets and the sun and the stars also play a part in their sense of direction to make them such exceptional navigators. But just like in the wild, the Moullecs geese have only this outward journey to memorise the route. They have one and one chance only to get it right.

The stopping points are chosen beforehand, but while up in the air the Moullecs must choose a rest area that will provide pasture for the geese, a calm

shelter for the microlights, access to a road for supply vehicles and little or no human presence for peace of mind.

To everyone's surprise the first stage goes off without a hitch, they travel further than expected and geese, humans and machines arrived in one piece, supplies arrive on time and the stopping point is perfect and is pretty as a picture. Or in Paola words, 'When I fly with the birds, they allow me to forget I am a land animal, I forget I'm 500 metres above my element, I am with them, for an earth creature like me it's truly wild.'

However, on the second stretch, right from take off, the geese refuse to leave the surface of the water. The geese know instinctively that the upper layer of air is unstable and they see no reason to go up there and get bounced around. After 15 minutes the Moullecs manage to coax the geese into the air, but after a short time there is mutiny. A dozen or so geese break away and dive to the ground, lost in the mist. Luckily the ground crew is still at the campsite where the renegade geese instinctively head, and they spend the next leg of the journey in the truck. This blank in their memory could be a problem for their return migration, which can only be filled by the memory of others that flew the whole path.

Given the imminent threat to the 'dwarf' goose, lobbying parliament wasn't an option. Christian had to act quickly - so he learnt to fly like a goose

When they arrive at their next feeding ground, three of the maverick geese are still missing. The Moullecs decide to take a break. By September 7th, they have covered 500 kilometres since Oster Malma, the expedition decides to take a rest, as it is necessary for the birds to regain their strength by grazing for a number of days. Their digestive system is designed for long endurance flights. The geese digest only 35 per cent of what they swallow, but quickly transform it into fat, storing it below the abdomen for maximum energy and minimum weight. The geese need sufficient reserves to undertake the long flying hours that await them. The birds also need to rest their

wings and inspect their plumage, having had a few minor scrapes with the microlight.

On September 13th the crew takes advantage of the weather and covers as many stages as possible. In the air the Moullecs are amazed when the birds get into a great routine. A few familiar leaders take turns up by the plane, leading the string of geese who take advantage of the low-pressure pocket made in their wake. The plane was at the apex of a perfect 'V' formation. Christian notices that the birds stay about one metre apart, which allows them a good view of the landscape and each other.

Having flown 900 kilometres in nine stages, they reach Germany on September 17th and then head south west for 500 kilometres over the Elbe and Rhine rivers. A mere 180 kilometres from their goal, the journey is hampered by one low pressure after another and because of the unexpected amount of time taken, the whole support crew has to go back to France. The only ones left on the outing are the parents Moullec and their 27 Lesser White-fronted geese. Every morning and evening Christian and Paola get ready to fly but in vain, they are stranded for eight days. With only two stages to go, all they need is a break in

the weather.

Finally, October 7th offers a very meagre window of opportunity. They decide to cover the remaining stages in one day, with a refuelling stop half way. Due to the weather the microlight has to fly at 700 metres and because of this there is a lot of turbulence, the geese race ahead and with the wind behind them they pick up time. After 30 days, 5 hours and 20 minutes of migration, the GPS finally picks up the location of the Xanten reserve, the future wintering grounds of Paola and Christian's Dwarf geese. As they fly into the new area, during their approach the microlight once again traces out wide curves so the geese can

# WEALTH WARNING

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remember the landscape.

Dr. Johan H. Mooji, a biologist specialising in White-fronted geese and the founder of the Xanton Bird Reserve, greets Paola and Christian. He's been waiting in a field for 1½ days, so he's overjoyed to see them.

The next day the Dwarf geese mingle with the thousands of other geese who have come to winter in the reserve while their 'father' goes back to his day job as a meteorologist.

By January 2000, Johan reports that the geese have blended in so well that no one now notices them – but will they keep the rendezvous at Oster Malma next spring?

When spring arrives the Moullecs are anxious to hear good news from Sweden about their brood and luckily it is encouraging. Eighteen of their geese have been observed on the Swedish reserve and there could have been more undetected among the other waterfowl. Christian returns there in May to see the results of his good work and when he dons his 'imprinting costume' he is delighted to see a gaggle of Lesser White-fronted geese alight from 20 metres away and flap up to him to say 'hello daddy'.

### The future

This year, Christian and Paola want to fly five microlights and a flock of 150 young geese artificially bred in Europe, to safe wintering grounds in Southern Germany. This would give the Lesser Whitefronts a much greater chance of survival as the species is still critically endangered.

Over the last six years Christian has been trying to raise money and awareness for Operation Lesser Whitefronts. From his home in south western France, he has driven all over Europe to take part in numerous air shows in an attempt to further his cause, but it's difficult without a major sponsor. Being the most 'animal friendly' country in Europe, Britain has been the most supportive of this project. Christian would now like to find a summer base in England where he can stay for the season and put on displays to attract awareness and money for their plight and flight. He is open to offers, and suggestions – preferably in French!

If you would like to help the Moullecs and Operation Lesser Whitefront



financially or otherwise, please email Christian Moullec on [apom@infonie.fr](mailto:apom@infonie.fr). For more information you can visit their website [www.zwerggans.de](http://www.zwerggans.de)

Long before microlights, John James Audubon, that great avian appreciator, said, 'But hopes are shy birds flying at a great distance seldom reached by the best

of guns.' We now know that Christian and Paola Moullec, with the help of like minds, can hatch hopes into confident birds...

■ Bridget Nicholls Smith is a freelance journalist

### **We Want Real Food**

Graham Harvey  
Constable & Robinson 2006, £9.99

For the past 50 years the populations of Britain and other western countries have been eating basic foods that have been stripped of the antioxidants, trace elements and essential fatty acids that are vital for good health. Graham Harvey explains clearly that we can all make a change in what we eat and radically improve our health as a result. Life on this planet is sustained by the minerals in the soil, and Harvey points out that when these minerals are lost through intensive chemical farming this not only affects the health of humans but also that of the whole food chain.

**Reviewed by Charlotte Plantema**

### **The Broken Mosaic: For an economics beyond equations**

Ladislau Dowbor  
Zed Books 2005, £15.95

This is a well thought through critique of the narrowness and moral blindness of conventional economics by Ladislau Dowbor, one of the key intellectual voices in Brazil.

His perspective is personal and innovative rather than theoretical and abstract. He pulls together a mixture of detailed and practical conclusions about economic and social policy, drawing on his own work as an economic advisor in countries as diverse as Poland, Portugal, Guinea Bissau, post-Soviet Mongolia, Sandinista Nicaragua, democratic South Africa and Brazil. This is an exciting book on cutting-edge economic thinking and makes for recommended reading for all students of development economics.

**Reviewed by Charlotte Plantema**

### **The Risks We Run**

Roger Moody  
International Books 2005, £15

In *The Risks We Run*, Roger Moody seeks to place Political Risk Insurance (PRI) in the broadest possible human context. According to Moody, we should be concerned about what goes on behind the closed doors of export credit agencies and the World Bank. He shows clearly that these agencies have misused a relatively obscure form of financial guarantee to foist some of the most damaging projects ever onto vulnerable communities. This book is for those who are really concerned about human rights, democracy,

and ecological integrity. It's a fairly demanding read, but the text is accompanied by a useful index and glossary to facilitate this altogether complex picture.

**Reviewed by Charlotte Plantema**

### **The Modern Pagan: How to live a natural lifestyle in the 21st century**

Brian Day  
Rider 2006, £14.99

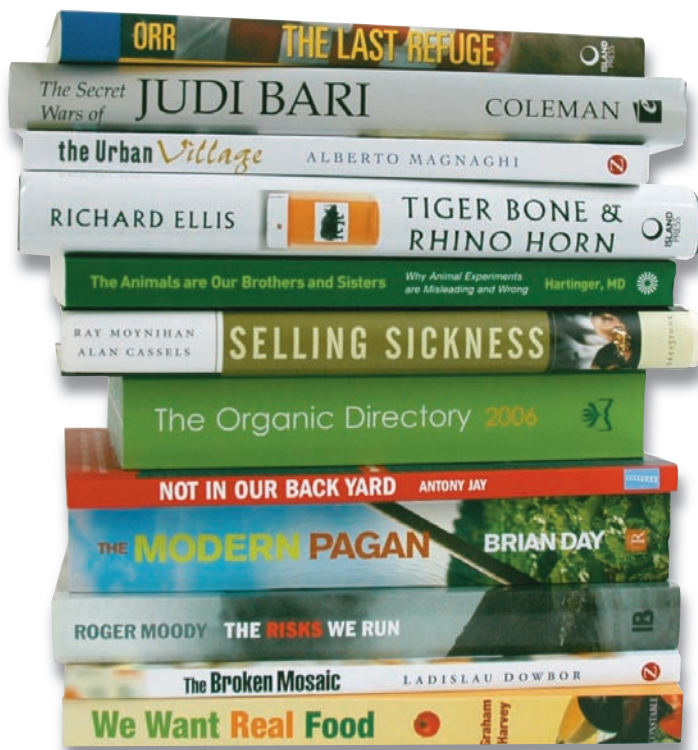
If you have a faith and are sticking to it, don't be put off by opening brief history of paganism. The majority of the book is dedicated to how to establish a modern pagan lifestyle, which fits seamlessly with many lifestyle choices of the environmentally-minded reader already, pagan or otherwise. Much of the practical advice is appealing and informative, in particular the section on creating food and drink from hedgerow fare, which is an inspiring reminder of how easy it is to withstand the lures of supermarket aisles.

**Reviewed by Tess Andrews**

### **Not In Our Back Yard: How to run a protest campaign and save the neighbourhood**

Antony Jay  
White Ladder Press 2005, £7.99

At last, a bible of wisdom for the would-be activist who is too frightened of officialdom to fight it. Jay concisely outlines a strategy to build confidence and an army of supporters simultaneously. With straightforward advice like this, anyone can construct a successful campaign, no matter how impenetrable the wall of bureaucracy. Every qualm, every niggles and every battle along



## ECOLOGIST *book club*

the way is addressed in this thorough guide that will have all of us marching outside the Houses of Parliament before long. This book is a must-buy for anyone who has ever considered fighting a battle, but hasn't known where to start.

**Reviewed by Tess Andrews**

### The Organic Directory

Clive Litchfield

Green Books with The Soil Association 2005, £8.95

*The Organic Directory 2006* appears again in its tenth incarnation since its birth in 1995 and is as informative and well-researched as ever, providing readers with details of retailers, producers, wholesalers and manufacturers of organic goods in the UK. Organised by county, it's easy for anyone to shop organically no matter where they live. Not only that, it'll address some of your more obscure organic requirements, such as where to find local box schemes that will deliver a box of organically grown fresh veg to your door every week, making being green easier than ever.

**Reviewed by Jo Thornton**

### Selling Sickness: How the world's biggest pharmaceutical companies are turning us all into patients

Ray Moynihan, Alan Cassels  
Greystone Books 2005, \$32.95

*Selling Sickness* vilifies the endless corporate exploitation of the natural fear of illness present in humans, and calls for a sharper awareness from us all of the grossly misleading advertising campaigns of the pharmaceutical industry. Drug

companies are making a fortune out of our desire to stay healthy and health care systems are under financial strain as millions of new patients are created every year under industry-controlled definitions of illness. But *Selling Sickness* doesn't just criticise. It also educates, informing us of what we can do to stop this epidemic of misinformation from taking over our perception of what it is to be healthy.

**Reviewed by Tess Andrews**

### The Animals Are Our Brothers And Sisters

Werner Hartinger, MD  
Temple Lodge Publishing 2005, £12.95

The age-old arguments against animal testing are back in force, this time argued by the prestigious Werner Hartinger, the late chairman of the German League of Doctors Against Animal Experiments. While his writing is draped over a spiritual undercurrent, the message is still the same: animal testing is unnecessary and is a poor indicator of potential effects of drugs on humans anyway. The book is an amalgamation of cogently and meticulously argued anti-animal testing arguments and a discussion of the Christian teachings regarding animals, the whole lot bound together by a writer with 30 years' experience in the medical profession.

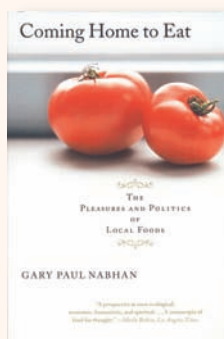
**Reviewed by Jo Thornton**

### Tiger Bone & Rhino Horn: The destruction of wildlife for traditional Chinese medicine

Richard Ellis  
Island Press 2005, \$26.95

An even greater threat than the

**This month our very own health editor, and author of 20 bestselling books on health and the environment, Pat Thomas picks a book that rocked her world, and hopes will rock yours too...**



### Coming home to eat – The pleasures and politics of local foods

Gary Paul Nabhan  
(WW Norton & Co, 2002)

This eclectic chronicle details Gary Nabhan year-long struggle to ditch the global smörgåsbord of supersized US supermarkets and eat only what could be produced within a 250 mile radius of his home. Difficult but doable you would imagine, except that he lives in the middle of the Arizona desert.

Nabhan's vivid descriptions of roasted mescal, home brews, the sensuous pleasures of gardening, pit roasting, air-drying, fishing and community feasting riveted me and ultimately forced me to face up to a single uncomfortable question: If this man can turn his satellite dish into a container garden, raise his own turkeys, opportunistically scout wild foods and glean food wisdom from indigenous tribespeople, what excuses do I have left for not hunting and gathering locally too?

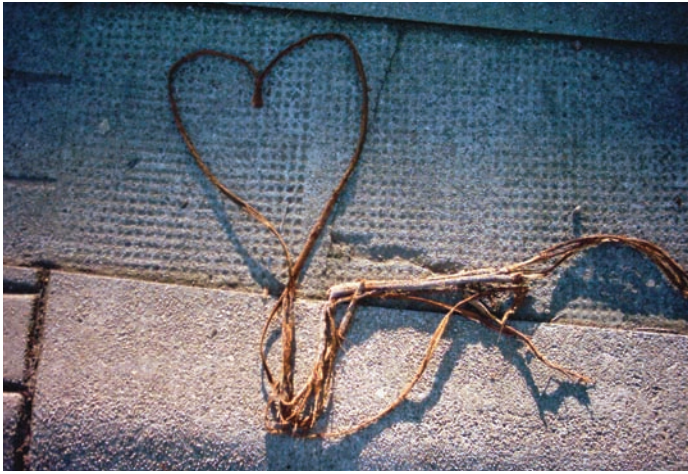
So, join the club, buy the book and let me know what you think. Did this book push your local food buttons or is Nabhan just a self indulgent foodie who's had a little too much sun? Did it inspire you or make you nauseous? Can we make the 'eat local' philosophy work or is the global economy too powerful? Have you tried and failed, or tried and succeeded in eating local? Maybe your story could be a road map for someone, so get online and tell me about it.

### HOW TO JOIN THE ECOLOGIST BOOK CLUB

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**TO BUY** *Coming Home to Eat* at the special ecologist book club price of **£7.21** (inc. p&p) and save 40% on the RRP of £9.99, **please call 01795 414 963** (M - F 9.30am-5.30pm) and quote ref: BOOK106 or click the Book Club button on [www.theecologist.org](http://www.theecologist.org)

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## A GREEN VALENTINES DAY

Every year we're landfilling or incinerating 100 million non-recycled, mass produced, unromantic valentine cards. So this year we should all make more of an effort to keep our romance and the planet alive. Tess Andrews on greening Valentine's day

**For the traditionalists among us, why not:**

### 1. MAKE YOUR OWN CARD

What makes the people you love tick? There's a tonne of unwanted magazines out there itching to be made into innovative, funny and unique valentine cards. Get busy with your scissors and glue – who knows, you might get lucky!

### 2. DON'T SAY IT WITH PESTICIDES

Roses are undoubtedly beautiful, but they are also undeniably predictable. What's more they are likely to be covered in pesticides, picked by badly paid women and children, and flown in from Kenya. Why not buy something fresh, local, organic and beautiful from your local farmers market?

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

### 3. LOVE ME, LOVE WORMS

Raise a glass of organic champagne to another year of love, lust and those hard working worms beneath rich, organic French soil.

[www.vintageroots.co.uk](http://www.vintageroots.co.uk), [www.vinceremos.co.uk](http://www.vinceremos.co.uk)

### 4. PLASTIC BAG JEWELLERY

Why not keep plastic bags from the stomachs of whales, dolphins and seals by buying a vibrantly coloured cuff bangle from Ecotopia. Each bracelet is one of a kind and crafted from recycled plastics. [www.ecotopia.co.uk](http://www.ecotopia.co.uk)

**For those of you who would prefer to stray from the well-beaten path to your loved one's heart, what about:**

### 5. MAKE YOUR OWN GIFT

The Craftster forums are jam-packed with ideas, instructions and help for homemade goodies from cookies and clothing to handmade photo albums and jewellery, whether you're a needlepoint novice or a seasoned seamstress.

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

ivory hunters who have driven the elephant to near-extinction are the traditional Chinese medicine advocates. Here Richard Ellis tells the harrowing truth behind the requisites of traditional Chinese medicine – horn of rhino, bone of tiger and bile of bear are all thought to have restorative powers, so the hunt for their owners is perpetual. But this global hunt is one that is annihilating some of our most glorious species. And what's shocking is that the medicines containing these animal parts have no known medicinal properties and do not work as claimed.

**Reviewed by Tess Andrews**

## The Urban Village: A charter for democracy and local self-sustainable development

Alberto Magnaghi

Zed Books 2005, £18.95

In this seminal work, Magnaghi introduces an almost tangible vision for a new urban localised utopia. He argues that strong local government will make our homes watertight against the impending globalisation that is marginalising our communities and that 'urban villages' are a means to local-level autonomous development and democracy. This means independent family-run businesses where multi-national corporations are currently in place, and flourishing villages where hordes of people are migrating to London. This is a fascinating read for anyone who wants political apathy to end and for us all to take part in creating a democracy. Time for each of us to take control our futures.

**Reviewed by Mary Cuthbert**

## The Secret Wars of Judi Bari: A car bomb, the fight for the Redwoods and the end of Earth First!

Kate Coleman

Encounter Books 2003, \$25.95

Judi Bari, organiser of Earth First! campaigns against logging in the ancient Redwood forests in Northern California, was almost killed by a bomb that exploded in her car as she travelled through Oakland campaigning. For the rest of her life Bari maintained that the timber interests of Northern California and the FBI had tried to kill her. *The Secret Wars* maps Bari's ascent from young activist to chief protector of the Redwoods, the story of a radical protestor determined to change the world we live in.

**Reviewed by John Cary**

## The Last Refuge: Patriotism, politics, and the environment in an age of terror

David W. Orr

Island Press 2005, \$20

What if our politicians were informed, terrorism was not misused and human rights were more important than corporations? This is the question Orr asks in his eminently readable critique of the Bush administration. The democratic processes that are supposed to connect the public will to government policy, he says, are broken. This collection of essays proposes that no problem is unsolvable, and that the key to regaining control of America as a functioning democracy is for its citizens to become alert and informed. After this, responsible leadership will follow suit.

**Reviewed by Tess Andrews**

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What's killing you and what's cleaning you? And how to pressure your favourite brand into improving their product. Pat Thomas reports

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Want to help make the UK energy self-sufficient? Step one, change your electricity supplier...

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Turn 59% of your household waste into the best soil in the world, whilst preventing climate changing landfill gases, toxic incineration emissions, and thousands of needless, polluting garbage truck journeys.

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If we want to stop the destruction of this planet, and create local, vibrant communities we are going to have to stop shopping in supermarkets and multinational chain stores and make every £1 we spend count in local, independent and ethical producers and retailers.

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# WHO SAID FEBRUARY WAS BORING?

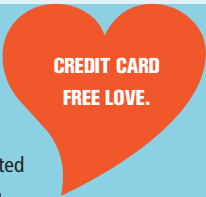
Staying in or going out – it's a wonderful world



## 1 WEDNESDAY KICK START FEBRUARY WITH A THREE-BEARDED ROCKLING.

Give north sea fish stocks a breather. Find your local independent fishmonger and try something different, seasonal, and sustainably caught (see [www.mcsuk.org](http://www.mcsuk.org) for info).

**14 TUESDAY**  
Every year we (the UK) are manipulated into spending half a billion pounds on last minute, impulse driven, panic induced, mass marketed love tokens. This year show the ones you love that you, not your wallet, really care. Make them a card and include a time voucher, for instance IOU 48 hours of me. Who knows what they might get you to do.



## 22 WEDNESDAY MAKE A BOMB

Sick of banal cityscapes and relentless urbanisation? A seed bomb is all you need to bring life to a grey part of your town. Simply compress a damp ball of soil and indigenous seeds and throw it – into a derelict car park, or somewhere that's just downright ugly. You could even make vegetable grenades. February is the best time to throw carrots, parsnips and bulb onions. For ammunition try HDRA ([www.organiccatalog.com](http://www.organiccatalog.com)), which stocks endemic and rare species.

## 2 THURSDAY GET KNITS!

Enjoy running your mouth? Knitting groups are back. Go to [www.stitchnbitch.co.uk](http://www.stitchnbitch.co.uk) for info on your nearest group and how to start your own knitting posse.

## 9 THURSDAY RELEASE THE RABBIT IN YOU

Grow carrots in your flat: mid-February is the perfect time to plant them. **1.** Buy organic carrot seeds of a small-rooted variety such as Oxheart. Try [www.organicseedsonline.com](http://www.organicseedsonline.com). **2.** Fill an eight inch deep trough with lots of light compost. **3.** Create narrow furrows with a pencil, two centimetres deep and 12 centimetres apart. **4.** Drop a couple of seeds every two centimetres along the furrows and cover with fine soil, very gently firming it down. **5.** Put the trough in a sunny, south-facing spot of your flat or house. **6.** Water daily with a fine spray. The seedlings will start to appear in two to three weeks, and they'll be ready to eat by June.

## 15 WEDNESDAY REJECT MULTI-TASK NAZISM!

Are you unable to perform 13 tasks simultaneously? Relax, it's International Single Tasking Day. Recent research shows that the amount of time the brain needs to switch between tasks adds up to more wasted energy than if it had stuck to a single one – what more excuse do you need to slow down?

## 23 THURSDAY PERFORM A CONSUMPTION AWARENESS RITUAL

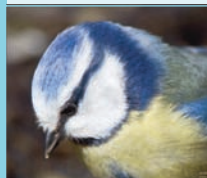
Mock the absurdity of the shopping process by performing a whirl-mart. Gather friends at your local superstore and create a slow, silent train of empty trolleys. Don't buy anything, just weave and whirl through the shop. Go to [www.thevacuumcleaner.co.uk/whirl.html](http://www.thevacuumcleaner.co.uk/whirl.html)

## 3 FRIDAY ONE HOUR, ONE LIFE

'I don't think I will forget the morning when Ellie read the whole of *Mog the forgetful Cat* and exclaimed with wide eyes, "I'm going to tell my Mum that I 'readed' a whole proper book without stopping".' Spare hour or two a week? Log on to [www.vrh.org.uk](http://www.vrh.org.uk) and give someone a skill for life.

## 10 FRIDAY CHECKMATE

Today marks 10 years since Garry Kasparov was defeated by chess supercomputer Deep Blue. Prepare yourself for the impending rise of the machines while developing your mental prowess – challenge a friend to a game of chess.



## 16 THURSDAY ATTRACT MORE BIRDS

Seen a nice pair of tits recently? Unlikely given that natural nest sites, in old buildings and hedges, have been turned into lifeless, neat brick cul-de-sacs and glass battery chicken boxes. Solve the housing crisis and mark the British Trust for Ornithology's National Nest Box Week 2006 (Feb 14-21) by making a bird box of your own. Instructions can be found in the free Nest Box Week leaflet available from Jacobi Jayne on 0800 0720 130 or at [www.jacobijayne.co.uk](http://www.jacobijayne.co.uk).

## 24 FRIDAY NEW MOON DREAMING

Print off Greenwich Observatory's star map in your lunch break today ([www.rog.nmm.ac.uk](http://www.rog.nmm.ac.uk)) and tonight grab a pair of binoculars and a compass, and cast your eyes to the skies. Keep an eye out for Venus, Jupiter and Orion's Belt shining particularly brightly this evening. Too much light pollution? Join the Campaign for Dark Skies at [www.dark-skies.org](http://www.dark-skies.org).



## 4 SATURDAY TV-B-GONE

Extensive research has shown TV to be the number one cause of dwindling social participation and interaction. Give TV a miss today, and record what you did instead (anything goes) in the 'Real Times' anti-TV guide at [www.whitedot.org](http://www.whitedot.org). Better still, turn off everyone else's with a TV-B-Gone keyring which works on virtually any TV set! See [www.tvbgone.com](http://www.tvbgone.com) for details.



## 17 FRIDAY LIBERATE YOUR LIBRARY

follow the '3 Rs' of BookCrossing: [1] Read a good book; [2] Register it at [www.bookcrossing.com](http://www.bookcrossing.com), get a unique BCID (BookCrossing ID number), and label the book; and [3] Release it for someone else to read (give it to a friend, leave it on a park bench, donate it to charity, 'forget' it in a coffee shop, etc), and get notified by email each time someone visits the site and records journal entries for that book. And if you include 'Release Notes' on the book, others can go hunting for it and try to find it.

COMPILED BY **STEVEN TAYLOR, SOPHIA CARPENTER-LEITCH, JENNY KINNEAR, BEN SNOWDEN, AND TESS ANDREWS**

**5 SUNDAY GET YOUR BIKE FIXED FOR A CHOCOLATE SPONGE CAKE...**

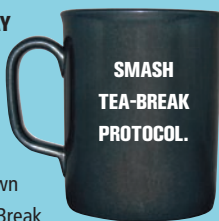
...or Spanish lessons for dog walking? Swap your brilliance for someone else's, sign up today to your Local Exchange Trading Scheme or LETS ([www.letslinkuk.org](http://www.letslinkuk.org)).

**11 SATURDAY HEAR RHUBARB GROW**

Pop up to Wakefield, Yorkshire to celebrate the end of the Annual Festival of Rhubarb, and take a tour of the candlelit sheds where you can actually hear the rhubarb growing. (For more info contact the Wakefield Tourist Information Centre on 0845 601 8353). Or make use of this season's rhubarb crop and brew yourself some rhubarb hooch. Visit [www.rhubarbinfo.com](http://www.rhubarbinfo.com) for some delicious homemade recipes.

**18 SATURDAY**

Put an end to awkward silences with unknown colleagues. Break rank at work today and make a drink for someone in another department. Then watch the ice, as well as your mental anguish, melt as you share the lift with Bob from accounts.



**25 SATURDAY FREecycle!**

Take a trip round your home and make a list of everything you no longer need or want. Log onto [www.freecycle.org](http://www.freecycle.org), find your local group and watch as your unloved possessions are born again.

**6 MONDAY**

UK apple orchards are struggling against cheap overseas imports. Turn your back on Pink Ladies and mark National Bramley Apple Week 2006 (Feb 6-12) by buying British Bramleys. For details, recipes, and all things Bramley, visit [www.bramleyapples.co.uk](http://www.bramleyapples.co.uk).



**12 SUNDAY GIVE FOSTERS THE BISHOP'S FINGER.**

Take your taste buds on a tour of local brews. Log on to [www.camra.org.uk](http://www.camra.org.uk), type in your postcode and make a list of all your local ales and where you can drink them, then head off with a beard, a pipe and a bunch of mates to sample them.

**19 SUNDAY CELEBRATE CLUTTER.**

Give up, chaos works. Contrary to popular belief, the 'organised' confusion of an untidy desk can actually be highly productive. Studies have shown how 'filers' are less likely to retrieve relevant information and more likely to acquire extraneous stuff due to their focus on administration, whilst 'pilars' have relevant information to hand, whilst moving their attention between prioritised hot, warm, and cold areas of their workspace. So today, give up the fight and bask in the complex ecosystem of your desk.

**26 SUNDAY SWAP, DON'T SHOP**

Invite your friends round, ask each of them to bring a bag of clothes that they (their family) no longer like or need and get swapping! Take the outcasts to your local Oxfam shop.

**7 TUESDAY GO ON A LETTERBOX DIET**

One million tonnes of junk mail gets binned in the UK every year. Play the junk barons at their own game by using pre-paid envelopes to send back other companies' unsolicited mail, or wrap up a brick and freepost it back to the company who's pestering you. And register for free at [www.mpsonline.org.uk](http://www.mpsonline.org.uk), to remove your name from up to 95 per cent of direct mail lists.

**13 MONDAY SITTING PRETTY**

Why not transform a colourless couch into a stunning sofa in a matter of hours this evening. Have a rummage through your local charity shop for fantastic fabrics, bed linen and curtains, and make new covers for your cushions. Find quick and easy instructions at [www.needlepointers.com](http://www.needlepointers.com).

**20 MONDAY MAKE THE BEST THING SINCE SLICED BREAD**

Express your outrage at the covert contamination (organophosphate pesticides used in mass-market bread production has been linked to cancer, decreasing male fertility, and Parkinson's disease) of your packed lunch by baking your own bread.



**27 MONDAY FEEL THE POWER OF THE TRAFFIC WARDEN**

If 4x4s make your blood boil... it's time to express yourself. Print off 'parking tickets' from [www.stopurban4x4s.org.uk](http://www.stopurban4x4s.org.uk), and feel your rage dissipate as you slip them under those fat, complacent, 'fuck you' rubber windscreen wipers.

**8 WEDNESDAY GET LOST**

Afraid of the unknown? Stuffed without your GPS safety-blanket? Defeat irrational fears and awaken the explorer within by getting off the bus or tube at the wrong stop. Then use your instincts to find your way home and marvel at the uncharted territory.



**21 TUESDAY WALK RIGHT**

Keep your body aligned with shoulders level, head up and back, and rib cage vertical. With each step, let your heel hit the ground first – that way weight rolls forward along the outside edge of foot onto the big toe – with which you push off for the next step. This shift of weight is done smoothly, with a continuous, fluid motion.

**28 TUESDAY DAISY ICE BOWL**

Seduce someone you love with a 'daisy bowl' full of ice cream...  
**1.** Take two bowls, one slightly larger than the other. **2.** Place the smaller bowl inside the larger, drop daisies in the space between the bowls and fill the space with water. **3.** Stick it in the freezer until frozen and, remove the bowls and wow! A daisy ice bowl.



We live in a country where: every week one farmer kills himself; £1 in every seven is spent in Tesco; apples are flown in from New Zealand, yet two-thirds of our apple orchards have been destroyed; one-sixth of what we pay for food in the UK goes on packaging; pesticides are a £500 million market; and local, independent food shops – including butchers, bakers, greengrocers and fishmongers – go out of business every week.

**THIS IS NOT ACCEPTABLE**

**We challenge the FOOD & DRINK industry to:**

- Grow organic
- Stop factory farming
- Cut packaging
- Pay fair wages
- Minimise food miles
- Remove all carcinogens and toxins such as: synthetic colours; additives; aromas and flavourings; artificial preservatives; flavour enhancers and hydrogenated fats

**What we can do as consumers**

- Never shop in supermarkets
- Buy local fresh food
- Cook more
- Grow our own food
- Support small, independent, ethical producers and retailers. See page 97 in the Green Shopping Guide

# FOOD HERO

Andrew Purvis talks to Geetie Singh, owner of the UK's only all organic pub, The Duke of Cambridge



Step inside The Duke of Cambridge pub in north London, and it hardly seems like the field headquarters of a militant food revolutionary.

At one table, diners pore over a menu featuring 'Grilled herring with braised puy lentils' and 'Wild mushroom risotto with pecorino cheese'. At another, a lone drinker quietly reads the newspaper over a pint of lager.

Only when you reach the bar does the counter look queasily unfamiliar: on the beer pumps, not a single brand is recognisable (where are the Carlsberg, Stella and Boddingtons?), while on the shelves behind, the iconic labels of Schweppes and Britvic are conspicuously missing.

'We never buy from multinationals,' says Geetie Singh, the pioneering Asian businesswoman who founded The Duke, the world's first organic gastropub in 1998, 'which is why you won't find sachets of Heinz ketchup. I can't be sure they are doing the right thing, meeting my ethical criteria, so the only way is to stick with small companies run by their owners.'

It's a radical, highly politicised stance that has won the 36-year-old awards for entrepreneurial vision and created a new, principled business model for others to follow. However, Singh's shunning of global corporations is no more unusual than her food policy. The herring on the menu is sourced from one of the 11 fisheries approved by the

Marine Stewardship Council (MSC) and all The Duke's fish is from non-depleted stocks, caught using sustainable methods. Prawns are banned – even wild ones – because they are 'completely unethical'.

Like the vast majority of the food, all the beers are organic (from the Freedom and Pitfield lagers to the Shoreditch stout and East Kent Goldings light ale), as are the wines and mixers. The tea, coffee, sugar and chocolate are Fairtrade, the electricity is solar-generated, and the fruit and vegetables are seasonal and locally grown wherever possible. Nothing is processed or pre-packaged (to avoid packaging waste) and nothing is air-freighted (to cut food miles and emissions).

### Peerless record

So exacting are Singh's standards, that no other pub has matched The Duke on its impeccable green record. It remains the only pub to be certified by the Soil Association, meaning that 95 per cent of its ingredients are organic. Even the non-organic ones have to be approved by the same stringent body, to make sure organic alternatives if they exist have not been overlooked. 'With other certifiers,' Singh explains, 'it's only 70 per cent organic and the other 30 per cent can be anything you bloody like.'

It's the first expletive of many, a sign of her raging indignation at the themed, soulless pub and restaurant industry. 'My reason for opening

The Duke was environmental,' says Singh, who was brought up in a hippie commune and trained as an opera singer before managing other people's restaurants for five years, 'but I wasn't on a mission to save the planet. It was more that I didn't want to make money if it was detrimental to the people or the planet. How could I?'

In restaurants, she had witnessed everything from bullying chefs and tearful waitresses to outright exploitation. 'There was no minimum wage,' she says, 'and sometimes you wouldn't get paid, so you'd live off your tips and there was your f'ing boss driving an f'ing Porsche! That made me really furious.'

For her, there was no choice but to open a restaurant that was 'sustainable, self-sufficient, with as minimal an impact as possible'. She set out to create a 'damn good gastropub', more democratic and down-to-earth than a restaurant with the added marketing advantage that it was organic. By using small local producers and micro-breweries, she hoped to boost a flagging rural economy, revive the declining craft brewing industry and encourage diversity – all of which she has.

From the outset, The Duke has been busy every night. While customers scarcely noticed the limitations of a seasonal menu or the vagaries of the organic supply chain, the pioneering staff preparing the food were exasperated by Singh's steely resolve to be 100 per cent ethical.

### Exactng standards

'Our first chef, Caroline, was massively frustrated because she couldn't use the ingredients she wanted,' Singh admits. 'She found it impossible when broccoli was substituted for potatoes because the supplier didn't have any, or when she had to order all her vegetables for a week, five days ahead. You just don't know, especially with a start-up restaurant, how much you're going to need.'

For a chef, though, wasn't it an exciting liberation to make creative use of whatever showed up? 'I don't think Caroline ever found it liberating,' says Singh with a sardonic laugh. 'When she left, she vowed to cook prawns, and fly salami all the way from Italy. She felt liberated by leaving!'

Despite such difficulties, The Duke has had only three chefs since it opened, a low turnover that Singh attributes to the autonomy and equality she gives employees. 'They all come to staff meetings, the accounts are open so they know what I earn, what everyone else earns,

and how much the company makes.'

Being organic is a small part of the equation. 'It's about being an ethical business where you're considering the impact you're having from every angle,' she says. As a result, she never stops refining her philosophy and moving forward in her thinking.

A good example is her fish policy. For Singh, who is troubled as much by the dwindling livelihood of fishermen as by plummeting fish stocks, even the MSC's enlightened policy isn't good enough. 'Not only am I buying local fish off day-boats, but I'm buying anything, provided it's not endangered, that they've caught.' It's admirable, but would her chef thank her for it? 'Probably not,' she says. 'I mean, what can he do with only one monkfish!'

### Small sacrifices

Sometimes, though, ecological high-mindedness has to be sacrificed in the face of commercial reality. 'For the business to succeed,' says Singh, 'it has to be an excellent gastropub first of all, so I need to employ great chefs. But I'm not going to keep my chef if she can only use onions and potatoes in February – I'm not going to survive. I have to compromise on my values in some areas.' Like what? 'We now get our f'ing peppers from Spain, don't we?'

Nevertheless, Singh is light years ahead of restaurants that call themselves 'organic' because they have certified meat or a handful of other items on the menu. EU law has been reinterpreted so that such terminology is legal as long as the owner is telling the truth. 'Producers can't use the word organic without being certified,' says Singh. 'Caterers can and it's self-declaration. Nobody monitors it.'

These days there is no excuse for being a pretender rather than the genuine article. 'Things have changed dramatically,' she says, 'it's so much easier now to operate ethically. There are more suppliers and there is no reason why your electricity shouldn't be green. I understand why people don't do it because it's a hassle, but I'm surprised no one has. The day The Duke opened, I thought everyone would open organic pubs.'

Clearly, not everybody has Geetie Singh's mettle or her masochism. Why should other restaurateurs choose such a difficult path? 'I'm doing it because I believe in it,' she says, 'but there is another reason: the customers love it, and I love it.'

■ Andrew Purvis is a freelance journalist

'We never buy from multinationals. I can't be sure they're meeting my ethical criteria, so the only way is to stick with small companies run by their owners'

### GEETIE'S PUB GUIDE

1. Support your local, independent pub
2. Encourage them to stock local beers, if they don't already, and to avoid multinational brands if brave enough!
3. Come and see us! Duke of Cambridge  
30 St Peters Street  
London N1  
Tel: 020 7359 3066





# 15 REASONS TO ORDER A BOX SCHEME TODAY...

Fruit and vegetables as nature intended them, delivered direct to your door

## 1. Taste the difference

A box-scheme delivers food harvested when it's ripe, so it comes to you full of flavour.

**2. Seasonality** Supermarkets give us 'permanent global summertime'. Box-schemes bring us in sync with nature's seasons.

**3. Save a British family farm** Box-scheme suppliers get at least 40p in every pound. Supermarket suppliers will see as little as 5p.

**4. Unadulterated salad leaves** Those 'convenient' pre-packed supermarket salads are doused in chlorine then preserved in bags with lowered oxygen levels, depleting vital nutrients.

**5. Real value for money** A 'value added' £1.99 vegetable and pasta bake would cost you only 40 pence to make with box-scheme produce – and would be much healthier.

**6. Reduce climate change** Air-freighted fruit and vegetables contribute 33 times more CO<sub>2</sub> than UK-sourced produce. Box-scheme food is typically grown within 50 miles of your home.

**7. Stop the beauty parade** Apples that don't fit a supermarket's exact colour specifications are 'graded out'. Box-schemes don't reject food on looks.

**8. Maintain food diversity** You're unlikely to find black salsify or Lady Godiva squash in Tesco, but you could well do in a box-scheme.

**9. Reduce waste** Over 40 per cent of household

rubbish that goes to landfill is supermarket packaging. Unpackaged box-scheme food is naked naturally.

**10. Reduce traffic congestion** Centralised distribution systems mean that up to 40 per cent of HGVs on our road networks are delivering food to supermarkets. Box-schemes gather and distribute food locally.

**11. Stop migrant labour exploitation** Box-schemes would see an end to the illegal trafficking of migrant workers in the UK, driven by supermarkets' determination to keep prices low.

**12. Community, not cash crop farming** Box-schemes encourage an ethos of self-sufficiency in their suppliers. Villagers in Kenya are left hungry in order to supply our supermarkets with mange tout.

**13. Stem the splurges** A staggering 60 per cent of a weekly supermarket shop is now bought on impulse. Box-schemes stop you frittering your money away.

**14. Support local economies** £10 spent on a local organic box scheme can generate £25 for the local economy. Supermarket profits are channelled into the bank balances of distant shareholders.

**15. Lighten your shopping load** Weekly fruit and veg delivered to your door means the rest of your shopping could be done from local independent shops on foot.



## POTATOES ROASTED WITH LEMON AND HERBS (serves 6-8)

**4 tbsp olive oil, 2 tbsp lemon juice, salt and pepper, 1 tsp fresh oregano or ½ tsp dried oregano, 1 tsp fresh thyme or ½ tsp dried thyme, ¼ tsp paprika, 900g (4 cups) peeled and quartered potatoes**

1. Combine olive oil, lemon

juice, salt, pepper, oregano, thyme and paprika in a large bowl. Add potatoes and toss.  
2. Transfer to greased shallow roasting pan and bake for about 35 minutes until tender and well browned.

# THREE STEPS TO FOOD HEAVEN...

To survive and thrive on your box scheme this month ALL you need is:

- 1** A weekly box full of fresh seasonal fruit and vegetables. To find your local box scheme supplier go to [www.theecologist.org](http://www.theecologist.org).
- 2** The following store cupboard essentials: **salt, pepper, olive oil, vinegar, butter, milk, eggs, sugar, basil, garlic, oregano, thyme, vegetable stock, white wine, parmesan and blue cheese, walnuts, sunflower seeds, nutmeg, pastry crust, whipping cream, lemon juice and paprika.**
- 3** And this month's no nonsense, simple and delicious recipes.



## CURLY KALE PESTO

**1 cup chopped curly kale, 1 1/2 tsp dried basil, 2-4 garlic cloves, 2 tbsp Parmesan 1/4 cup sunflower seeds, 3/4 cup olive oil, salt and pepper**

- Blend curly kale, basil, garlic, Parmesan and seeds in a blender or food processor.

- With blender running slowly, gradually add olive oil. Season to taste. You may need to add a little more olive oil.
- Keeps well in jars in the refrigerator for up to three days.

## LEEK AND WALNUT SOUP (serves 4)

**4 medium coarsely chopped leeks, 1/2 pint vegetable stock, 1/4 pint white wine (optional), 1/4 tsp salt, 1 tbsp sugar, 3/4 cup finely chopped walnuts, 1 tsp vinegar**

- Place leeks, vegetable stock and wine in large saucepan with lid. Bring to boil, reduce heat and simmer for about 12 minutes, or until just cooked.
- Add salt, sugar, nuts and vinegar. Simmer uncovered for seven minutes.

## PARSNIP PIE (serves 4)

**1 cup peeled and sliced parsnips, 25 g butter, salt and pepper, 2 eggs, 2 tbsp sugar, 1/2 tsp nutmeg, 225ml/1 cup milk, 9 1/2 inch pie dish lined with shortcrust pastry**

- Place parsnips in a saucepan with salted water. Bring to the boil, cover the pan and quickly return to the boil. Reduce heat and simmer until cooked, about 10 minutes. Drain and mash.
- Add the butter, salt and pepper
- Beat the eggs, add the sugar and nutmeg. Add the milk. Stir into the parsnip mixture and mix well.
- Line the pie dish with pastry and pour in the parsnip mixture
- Sprinkle with nutmeg and bake in oven, 190C (375F/Gas 5) for about 30 minutes.

## SWEDE WITH BLUE CHEESE (serves 4)

**450g (2 cups) peeled and finely sliced swede, 1 peeled and finely sliced onion, 4 tbsp vegetable oil, 150 ml (1/4 pint) whipping cream, 1/4 tsp ground nutmeg, salt and pepper, 125g (1/2 cup) blue cheese such as Stilton or Roquefort**

- Preheat oven to 190C (375F/Gas 5). Mix together swede, onion and vegetable oil and place in a baking dish. Cover and place in oven for about 30-

45 minutes or until cooked.

- In a small pan, combine cream, nutmeg, salt and pepper. Bring to the boil and let cook for one minute.
- Remove swede and onion mixture from oven, remove cover and pour cream mixture over. Sprinkle with the blue cheese and return to the oven, uncovered.
- Cook in oven for 15-20 minutes or until cheese is melted and golden brown.



Recipes are from *The Boxing Clever*

*Cookbook* by Jacqui Jones & Joan Wilmont. For more seasonal box-scheme recipes, this cookbook is available for £9.99 from [www.theboxingclevercookbook.co.uk](http://www.theboxingclevercookbook.co.uk)

THIS MONTH'S VINEYARD:

# DOMAINE JOLIETTE



Monty Waldin marvels at the passion of the Mercier brothers for their wines and surrounding habitats and picks three delicious bottles for the wine club



The Mercier family, of Domaine Joliette, adopted organic and Biodynamic winegrowing practices on their little patch of Roussillon in 2000. The estate is owned and run by the fourth generation of the Mercier family in the form of André Mercier and his now thirty-something son Philippe (see photo). There are around 30 hectares (74 acres) of vines on hilly slopes sandwiched between the Pyrenees mountains to the south and the Corbières mountains to the north.

So did the family see 'going green' purely as a marketing choice, to boost sales by attracting a bit of attention?

'Absolutely not,' says Philippe. 'Instead, we saw organics as offering common-sense solutions to the types of problems that chemical agriculture fosters. A lot of our vineyards are on hill slopes, and with our hot, dry summers soil erosion can be significant, especially as when rain does come it arrives in short, but heavy bursts.'

Cover crops are now sown between the vine rows as a ground cover. Oats, barley and rye grass all put down fine roots when they are sown among the vines just after harvest (in October) and these help bind the sods of soil together. When the oats, barley and rye are ploughed in the following year they bring

organic matter to the soil in the form of carbon and this nourishes the soil by providing food for soil micro-organisms that keep the soil friable and alive.

Another cover crop, common vetch, has a different function at Domaine Joliette. It grows much lower to the ground than oats or rye, covering the bare earth. This helps stop the sun's rays from drying the topsoil too much and helps slow down raindrops as they hit the ground, reducing the leeching effect that heavy rain can bring. Furthermore, when vetch is ploughed into the soil in April it contributes nitrogen, which again feeds soil micro-organisms. These micro-organisms then work as a food chain, helping make vital minerals in the soil available to the vine roots to eat.

'Compared to using chemical fertilizers, sowing cover crops is much more work,' says Philippe, 'but chemical fertilizers actually have the reverse effect on the soil of what they are designed to do in that they end up impoverishing it. Instead of feeding the soil they feed the vines directly, almost like hydroponics, as chemical fertilizers only become active in the soil after rainfall. So the vine is no longer really in contact with the soil. With cover crops we are feeding the soil, and then the soil feeds the vine. The wine

## THIS MONTH'S TASTING NOTES for DOMAINE JOILETTE

### 1 Cuvée André Mercier, Côtes du Roussillon

Warm, inviting, hand-picked red made mainly from the unctuous Grenache Noir, which provides soft, red plum flavours and the Syrah and Mourvedre grapes, which give appealing tastes of bitter redcurrant. Light-to-medium bodied.

### 2 Cuvée Romain Mercier

Solidly structured blend of mainly Syrah, which provides soft, raspberry flavours, Grenache Noir which gives baked,

black plum flavours, and a pinch of Mourvedre, which brings a seasoning of herb and truffle. Ageing in French oak barrels adds a vanilla sheen to this wine.

### 3 Muscat de Rivesaltes

Moreish and powerful sweet white wine made from the Muscat grape. It has warm, musky flavours, and is ideal either before a meal on its own, or with savoury foods like blue cheese or a bowl of nuts.

now tastes of the soil, not of the chemical fertilizers you have been trucking in.'

The downside to all this organic joy is lower vine yields. 'Of course, if you are not artificially feeding your vine with quick-release chemical fertilizers and opt instead for the slow-release effect of sowing cover crops on your soil, you must expect to produce less wine,' says Philippe. 'We produce about 30 per cent less wine under organics, but we get more highly flavoured, more concentrated wines.'

'We have found since switching to organics that we have fewer problems with fungal diseases like mildew and rot. This is because the vines are growing in a healthy way, steadily all through the season. Vines attract diseases when they grow too quickly and become too vigorous. The result is that the skins on the grapes become far too thin and attract mildew and rot spores, which work by puncturing the skins to feed off the sugar in the grapes. We know organics has given our grapes thicker skins because our red wines now have much more colour – the red wine colour is held in the skins. So it stands to reason that if you give the vine the right food, by letting it feed slowly day by day from the soil rather than by giving its roots a single huge meal of chemical fertilizer that forces the vine to get bloated and disease-prone, you get healthier grapes and better quality wine. You just have to accept that you will have fewer bottles to sell though.'

France's wine surplus would be eradicated overnight if the country's winegrowers did what the Merciers do: fostering vine health by fostering soil health, improving soil and wine quality, making a better product that more people wanted to buy.



*Biodynamic Wines* by Monty Waldin is published by Mitchell Beazley. To order at the special price of £20.00 including post and packing (RRP £25.00) please call 01903 828503 and quote the code PUB320.

PHOTOGRAPHS BY ADRIAN TAYLOR

## ECOLOGIST ORGANIC & BIODYNAMIC WINE CLUB

### WHY JOIN?

Every month Monty Waldin travels to one of his favourite organic & Biodynamic vineyards, and finds out what makes the wines they produce delicious. Whether it's a horse drawn plough, a homemade organic root treatment, or a cow's horn full of manure planted under a full moon – each of these vineyards is rich in character and as true to the climate, soil, vine and natural habitat as it's possible to be. And for the wines Monty has selected for wine club members to try, we've negotiated excellent discounts, making every case we offer great value for money. It's then over to you to buy the wines, taste them and visit [www.theecologist.org](http://www.theecologist.org) to tell us and each other what you think of them.

And for the more political among you, reassure yourselves that you will be supporting small scale, family owned and run vineyards, fighting the commoditisation of wine by the large multinational wine labels.

### HOW DOES THE WINE CLUB WORK?

Each calendar year we will be offering six mixed cases of delicious organic and Biodynamic wines at up to **15 per cent off the retail price** (average discount £5 per case, potential savings of £30 in total).

■ **To join the *Ecologist* O&B Wine Club, simply subscribe to the *Ecologist* magazine for £28 (£24 DD).**

**CASE 1** (12 bottles) MID WINTER WARMERS **£52.45 (incl. p&p)\* normally £60.34**  
**Domaine JOILETTE 3 bottles (see tasting notes opposite)**

**1** Cuvée André Mercier, Côtes du Roussillon 2001, **2** Cuvée Romain Mercier 2003, **3** Muscat de Rivesaltes 2004

**Domaine DE BRAU 9 bottles (see March issue for tasting notes)**

**4** Cite de Carcassonne 'Meditation', **5** De L'Aude (x2), **6** Chardonnay Roussanne, **7** Cabernet Franc / Cabernet Sauvignon, **8** D'Oc Cuvée Gabriel (x2), **9** Chardonnay Finement Boise, **10** Cabardes Cuvée Exquise

■ **TO ORDER YOUR CASE OF MID WINTER WARMERS, CALL 01795 414 963, MON TO FRI 9:30AM - 5:30PM AND QUOTE REFERENCE: VINTAGE01**



### TERMS & CONDITIONS

\*Non-UK customers may incur a further surcharge. Available in the UK only. Allow five working days for delivery. Purchasers must be 18 years or over. One case per subscriber while stocks last. Offer open to *Ecologist* subscribers. Vintage Roots, Bridge Farm, Reading road, Arborfield, Berkshire, RG2 9HT supplies and delivers wine for the *Ecologist* Organic & Biodynamic Wine Club. Further terms & conditions available at [www.theecologistwineclub.org](http://www.theecologistwineclub.org)

# ORGANIC WINTERS

Sustainably made clothing for the cold winter months – made to last season after season

'Ever more precisely marketed products, and the power of the fashion industry, create a fetishistic concern to have this consumer good rather than that one, even though there is often no significant practical or aesthetic difference,' psychologist Oliver James wrote in the *Ecologist* in 2004. Behind the £48 billion a year we in the UK spend on clothing and jewellery, there is a cheap and expendable workforce, excessive pesticide use and carcinogenic dyes.

## THIS IS NOT ACCEPTABLE

We challenge the CLOTHING & JEWELLERY industry to:

- manufacture and sell long lasting, durable products
- employ sweatshop-free labour
- use organic and natural fibres
- use natural dyes

What we can do as consumers

- Buy fewer clothes
- Look for quality
- Buy second-hand
- Don't be fashionable sheep
- Make our own
- Hold manufacturers and retailers to account
- Support small, independent, ethical producers and retailers. See page 95 in the Green Shopping Guide



## DESIGN PIONEERS

Behind its glossy finish, 'conventional' fashion comes to us courtesy of starvation wages, child labour and the exploitation of natural resources. While this dark underbelly doesn't bother most fashion designers, others don't hide behind their labels. The Ethical Fashion Forum is a network of small-scale designers specialising in organic textiles, natural dyes, fair trade sourcing and production and recycling. It aims to educate a new crop of design students on garment industry problems, strengthen ethical sourcing, and change public perception of ethical fashion through catwalk shows (pictured above), lectures and other events. Join the mailing list by emailing [info@ethicalfashionforum.com](mailto:info@ethicalfashionforum.com)

## SPOT ON BUSINESS

Equa clothing is London's first all organic and fair trade clothing store. Penny Cooke, owner, sources her stock of women's clothing and shoes and children's wear from nine different sustainable clothing labels.

Equa, 28 Camden Passage, Islington, London N1, [www.equaclothing.com](http://www.equaclothing.com), tel: 020 7359 0955





Recycled Tweed Jacket with  
Green Scarf £185  
Recycled hooded shirt £95, all by  
Junky Styling  
Available by mail order from  
[www.junkystyling.co.uk](http://www.junkystyling.co.uk), tel: 020  
7247 1883  
100% organic, bark coloured Cord  
Amish Jeans £65  
Frost/Bark Staple Jumper £50  
Both by Howies  
Available by mail order from  
[www.howies.co.uk](http://www.howies.co.uk)  
Shoes £60 by Worn Again  
Lining made from ex-military  
long johns and towels. Soles  
made from recycled rubber.  
Upper made from ex-military  
parachutes, prison blankets, car  
seats and scrap leather.  
Each pair is unique. Available  
by mail order from [www.terra-  
plana.co.uk](http://www.terra-<br/>plana.co.uk)



Reversible, recycled coat £175 by Prouvost And Father. Available from Junky Styling, [www.junkystyling.co.uk](http://www.junkystyling.co.uk), tel: 020 7247 1883. Knee length ladies brown cords £126.99 by Ciel. Available by mail order from Equa, [www.equaclothing.com](http://www.equaclothing.com), tel: 020 7359 0955. Jana Boots £100 by Terra Plana Available from Terra Plana, [www.terra-plana.co.uk](http://www.terra-plana.co.uk), tel: 020 7407 3758. Organic hemp/cotton mix role neck top £55 by Enamore. Available by mail order from [www.enamore.co.uk](http://www.enamore.co.uk) Vintage Hat £17 from Spitalfields market

Winter Coat £160 by Gwenitta Reclaimed fabrics. Available by mail order from [www.enamore.co.uk](http://www.enamore.co.uk). Damson Baby alpaca knitted dress £175, Green Alpaca bolero 50% alpaca, 50% wool £90 both by Pachacuti. Available by mail order from [www.pachacuti.co.uk](http://www.pachacuti.co.uk), tel: 01335 300003. Daphne Boot £165 by Beyond Skin. Available by mail order from [www.beyondskin.co.uk](http://www.beyondskin.co.uk). Green Paxiuba Pearl Necklace £15 by Jungle Berry. Available by mail order from [www.jungleberry.co.uk](http://www.jungleberry.co.uk). Organic wool crochet hat £35 by Gwenitta Available by mail order from [www.enamore.co.uk](http://www.enamore.co.uk)

**Woolly Petal Mittens**

**£18 by People Tree**

Long, fingerless gloves with ribbed scrunch sleeves and knitted corsage at the wrist. Hand knitted in Kathmandu, Nepal through a Fair Trade project providing 150 women with a stable income from knitting and 250 children with free schooling.

Available by mail order from [www.ptree.co.uk](http://www.ptree.co.uk)



# PICK OF THE MONTH

*The Ecologist's* Fair Trade and organic picks for February

**Organic Jeans**

**by Kuyichi**

**Prices range from £80-£100**

Dutch-based Kuyichi works in a Fair Trade partnership with 80 organic cotton farmers in Peru, who own a third of the company's shares. The partnership involves the transformation of cotton growing in the Cañete valley, 150 kilometres south of Lima, which traditionally has been one of the heaviest users of chemical pesticides and fertilisers in Peru. The organic cotton farmers, most of whom cultivate less than five hectares of land, support themselves by also growing yellow maize, sweet potatoes, grapes, mandarin oranges, asparagus, potatoes and cassava.

Kuyichi jeans come in a range of different styles for both men and women. See [www.kuyichi.com](http://www.kuyichi.com) for stockists throughout the UK.



**READER OFFER House Slippers**

**by Eternal Creation**

Eternal Creation works with a Tibetan ex-political prisoners' organisation in Dharamsala, North India. The project provides training and jobs in tailoring and screenprinting and Eternal Creation donates 10% of the cost price of its products back to the organisation.

**Stockist** Equa (details on page 78)

**Price £24** (RRP £30) *Ecologist* readers save 20%. Quote reference 'Ecologist Reader Offer'.



PRODUCTION: **ELIZABETH LASKAR**. HAIR: **LAUREL STAPLE** USING AVEDA. MAKE-UP: **JUST BLUSH** USING DR HAUSCHKA. STYLISTS: **ELIZABETH LASKAR** AND **PAMELA DANIELS**. PHOTOGRAPHS: **MARCELLO CAPOTOSTI**. MODELS: **CATHERINE CORRY** (EDEN MODEL MANAGEMENT), **MATT WINTON** AND **MARINA DELANNOIS**. LOCATION: ANGEL CANAL, LONDON.

The amount of baby gear we purchase in the name of 'good' parenting - nappies, wipes, bottles, car seats, pushchairs, clothes, shoes, toys and other nursery items - is staggering. Given the ongoing expense of raising a child and the heavy competition that exists between different manufacturers for parent's custom, it's little wonder that many of the most common baby and child accessories have been made in sweatshops using chemicals that harm both our children's health and the environment.

**THIS IS NOT ACCEPTABLE**

**We challenge the BABY & CHILD industry to make products with:**

- No potential carcinogens, neurotoxins and reproductive toxins
- No artificial additives, colourings or perfumes
- No petrochemicals
- No synthetic fibres
- Minimise packaging
- Use organic ingredients
- Stop marketing to children under 16 years old

**What we can do as consumers**

- Read and understand the label
- Buy fewer products
- Buy reusable products, eg cloth nappies
- Make our own, eg food
- Challenge stockists to sell safer products
- Support small, independent, ethical producers and retailers. See page 93 in the Green Shopping Guide

# CUTTING MY TEETH ON CLOTH NAPPIES

Matilda Lee, Green Pages editor, was forced to practice what she preaches when faced with her newborn baby and a pile of cloth nappies

**M**other Ease. I scribbled down the words on a scrap of paper and stuffed it into my purse. In the casual and inevitable conversations that arose when well-wishing strangers caught a glimpse of my huge, protruding belly, this was the second time I had been recommended cloth nappies.

Terries, prefolds, all-in-ones, wraps – plain and printed – Velcro or snaps, hemp, cotton, wool. It was all too much. Another month passed before I fished out that scrap of paper, went online and, after a couple of definitive clicks of the mouse, had a Motherease One Size set coming my way by post.

I had all the right reasons for wanting to use cloth nappies – minimise landfill waste, reduce toxic exposure on the newborn, save money. And after writing a piece extolling the virtues of cloth nappies for this magazine, I considered myself an authority on the subject. So yes, I could recite statistics on how using cloth nappies protects old-growth forests, but could I actually put one on my own baby?

With very little in the way of support (most of my friends still lead carefree, childless lives and nappies are nothing near what they were in my mum's and



Mitja Volcic, aged 6 months, in his cloth nappies

'So yes, I could recite statistics on how using cloth nappies protects old-growth forests, but could I actually put one on my own baby?'

grandmum's time) and with hubby threatening to boycott nappy changing completely, would I be up to the task? Was I resigning myself to a lifetime spent hunched over a nappy changing table just to take a stand against the disposable nappy industry?

Then my son Mitja was born. Physically and emotionally exhausted, at that point I couldn't have cared less what his nappies were made of. All I wanted was to snatch a couple hours of uninterrupted sleep. After two weeks, when we came to the end of our 'emergency' eco disposables, I was forced to confront the pile of freshly

washed, unused cloth nappies.

My first attempt was laughable. Brilliantly, One Size cloth nappies are adjustable and, depending on how you fold and button them, will fit a baby from birth through his entire nappy life. But I conveniently misplaced the instructions – so after spending thirty minutes or so fiddling with different configurations of buttoning, I had successfully put on a cloth nappy that reached my son's armpits. Whoops. My little tot was practically swimming in his nappy. No need to mention how effective that was at catching poo.

At my second attempt, I managed to figure out how to fold the front flap so at least it went round his waist, but was still coming up with very bulky nappies that leaked. Around my fourth try, I had not only learned how to fold it right, but also had the buttoning down to fit snugly round him. It didn't leak and even looked cute on him. There's been no looking back.

Changing is a cinch. Inside the cloth nappy, I put a paper-thin cotton nappy liner (similar to kitchen paper), which catches most of the poo. While there are some nappy liners that can be washed and reused, mine can be flushed or thrown away. Outside the cloth nappy, I button over a plastic waterproof wrap.

Washing them is equally painless. I have a net bag that I put into the pedal bin I bought specifically to store dirty nappies. The bin has a tight-fitting lid (just like a bin you would buy to store disposables), so there are no bad smells. When the bin is full, I pull the whole bag out and put it straight into the washing machine. I do two

'Over my son's nappy life, I will save roughly £600 using cloth nappies'

loads of nappy wash (60C) a week, which are then hung out on a wire rack, where they usually take about a day to dry.

The one, and for me only drawback to cloth nappies was the initial expense. I chose to buy a complete set upfront, which cost me a painful £300. Having now spoken to a bunch of other mums using cloth nappies I now know there's no need to do this. But there is a silver lining. Over my son's nappy life, I expect to save roughly £600 (based on spending £31 a week on disposables, equating to £900 over his nappy life).

Admittedly, I took a few tries before I really got the hang of using cloth nappies, but given the significant money saved and that over the next couple of years I'm preventing, literally, one tonne of nappy waste going to landfill, it seems a very small price to pay. My next challenge is to get my husband to change Mitja's nappies more often. Any advice?

All your questions about cloth nappies can be answered by:

■ The Nappy Lady (tel: 0845 456 2441) gives free advice and is also a cloth nappy retailer.

■ The Real Nappy Helpline (tel: 0845 850 0606 Mon-Fri 8am-8pm, Sat 9am-12pm) has info on local cloth nappy support groups and laundry services.

■ For 'virtual' support go to the 'Cloth Nappy' forum at [www.ukparents.co.uk](http://www.ukparents.co.uk)



## ACTION ACTION ACTION ACTION ACTION NO EXCUSE CLOTH NAPPY CAMPAIGN

Eight million disposable nappies are thrown away each day in the UK, the vast majority ending up in landfill, where they take hundreds of years to fully decompose. Disposables are made of superabsorbent chemicals, paper pulp, plastics and adhesives – not the most natural materials to have next to a baby's skin. And for every pound parents spend on disposable nappies, we the taxpayer have to spend 10p disposing of them. This is completely unacceptable given that there is a perfectly viable, cheaper, easy-to-use, and suitable alternative...

### REUSABLE CLOTH NAPPIES.

Shockingly, most parents haven't even seen a cloth nappy – let alone tried to use one.

**This is why we are launching this NO EXCUSE Cloth Nappy Campaign, which is a special offer trial pack of three of the leading brands of cloth nappy for just £24 (RRP £35 – save over 30 per cent).**

### The NO EXCUSE CLOTH NAPPY TRIAL PACK includes Three leading brands of cloth nappy:

Motherease, Tots Bots and Popolino;  
1 booster pad;  
1 waterproof wrap;  
1 fleece liner;  
Sample paper liners;  
and an easy-to-follow instruction leaflet.

■ TO ORDER YOUR NO EXCUSE CLOTH NAPPY TRIAL PACK FOR £24, TELEPHONE 0845 456 2441, MON-FRI 9AM-8PM, AND QUOTE REFERENCE: **ECOLOGIST CLOTH NAPPY CAMPAIGN.**

TERMS AND CONDITIONS:  
Available in the UK only.  
Limited to one pack per household.



# READ THE LABEL DETERGENTS

Why choose between looking good and being healthy? **Pat Thomas** examines the ingredients in personal care products and asks why manufacturers don't use safer alternatives

If you use modern cosmetics and bodycare products, then you are exposing yourself to harmful chemicals. On average we each use 9 different products, with over 120 unique ingredients, daily; 90 per cent of these have never been fully evaluated for safety. Your skin can't protect you from these. Individually and in combination most can quickly and easily penetrate the skin and be absorbed into your body where they are linked to a range of problems including cancer, birth defects and central nervous system damage. This is not acceptable.

#### We challenge the cosmetics industry to make products with:

- No potential carcinogens, neurotoxins and reproductive toxins
- No petrochemicals
- No synthetic perfumes
- No synthetic colours
- Ingredients with full safety data
- Ingredient label on the product
- Internationally standardised ingredient names
- Packaging that minimises the need for preservatives
- Organic ingredients

#### What we can do as consumers

- Read and learn to understand the label
- Buy fewer products
- Use less of what we do buy
- Dilute
- Ignore label hype (eg 'scientifically proven', 'visible results in seven days')
- Make our own
- Report adverse effects to manufacturers
- Challenge stockists to sell safer products

Body washes, shampoos, bath foams, baby wash and shower gels, facial washes and scrubs – all the foamy stuff we use in the bathroom relies on complex modern detergents to wash away simple dirt.

Detergents are part of a larger group of chemicals called surfactants (short for 'surface active agents'). Surfactants interact with water and change its properties, for instance lowering its surface tension and making it 'wetter' and better able to interact with other additives in the mixture. Detergents have similar properties and may, in addition, add foaming ability.

Anionic detergents are the most common detergents used in cosmetics and bodycare products. They are popular with manufacturers because they work quickly and well in both hard and soft water and they foam and rinse well. But anionic detergents such as lauryl sulphates, sarcosines and sulfosuccinates can also be harsh – so much so that they are prized in industry for degreasing engines and heavy duty cleanups.

Detergents, which replaced simple soap in our hygiene routine soon after WWII and which form a major part of most bath products, were originally developed for industrial use in hard water areas where they were thought to clean more efficiently. Since then research



Anionic detergents can be harsh - so much so that they are prized in industry for degreasing engines and heavy duty cleanups

has shown that simple soap and detergents perform equally effectively in most types of water, although hard water appears to increase the potential of both types of cleaners to irritate the skin.

Manufacturers also boast that, unlike soap, detergents do not produce precipitate – the scummy substance that

floats on the water or sticks to the side of the bath or shower. This is not strictly true since all washing products produce some degree of precipitate and claims about precipitate simply serve to illustrate how much manufacturers rely on aesthetics rather than effectiveness to sell their products.

Rich foamy lathers are

another case in point. Foam adds no cleaning ability. However, manufacturers constantly add more detergent and additional foam boosters to produce the foam they believe consumers can't live without. The increased concentration of detergent creates the need for conditioners and other additives, generating a much more complex cocktail of ingredients in the attempt to limit any skin reaction to the detergents.

Anionic detergents meet all the performance and aesthetic requirements of product formulators and while a detergent on its own is

Once added to the product these chemicals readily react with any nitrites present to form the carcinogenic nitrosamine, NDELA (N-nitrosodiethanolamine). Nitrosamines are also among the major carcinogens in cigarettes and cured meats.

Nitrites can get into personal care products as contaminants present in raw materials. They can also be the result of additives such as formaldehyde-releasing or formaldehyde-containing chemicals such as 2-bromo-2-nitropropane-1,3-diol (also known as BNPD or Bronopol) and Padimate-O (octyl dimethyl PABA), DMDM

Foam adds no cleaning ability, but manufacturers constantly add more detergent and additional foam boosters to produce the foam they believe consumers can't live without

unlikely to be directly toxic, a harsh detergent can strip the skin and hair of protective oils, increasing the risk of dry skin and the absorption of other chemicals into the bloodstream.

Detergents can be harmful in other, less direct ways. Some, especially those with names ending in *eth* (as in sodium laureth (eth in italics) sulphate), can be contaminated with the carcinogen 1,4-dioxane. Others, such as DEA (diethanolamine), can interact with other ingredients in the mix to form carcinogenic nitrosamines.

DEA and its related compounds, such as TEA (triethanolamine) and MEA (monoethanolamine), can invariably be found in products that foam, including bubble bath, body washes, shampoos, soaps and facial cleansers.

hydantoin, diazolidinyl urea, imidazolindinyl urea and quaternium 15.

Stored for extended periods at elevated temperatures, nitrates will continue to form in a product, and surveys in the US and Europe have shown that between 42 and 93 per cent of all detergent-based products contain nitrosamines.

■ Pat Thomas is *The Ecologist's* health editor



## ACTION ACTION ACTION ACTION ACT

**Soap is a simple**, effective and largely natural cleanser. Detergents can only be produced synthetically and the damage they can do to skin, hair, eyes and mucous membranes varies according to how harsh and denaturing they are. If you are determined to buy detergent-based bodycare products, you can make safer choices by choosing those made with ingredients that have a milder action on the skin and/or don't contain potential carcinogens.

**1 Go into your bathroom and look at the labels of your favourite products. Do any of them contain the following detergents?**



<b>Ammonium laureth sulphate</b>	<b>Lauramide DEA</b>
<b>Ammonium lauryl sulphate</b>	<b>Linoleamide MEA</b>
<b>Cocamide DEA</b>	<b>Monoethanolamine (MEA)</b>
<b>Cocamide MEA</b>	<b>lauryl sulphate</b>
<b>Cocamidopropyl betaine</b>	<b>Myristamide DEA</b>
<b>DEA olet-3 phosphate</b>	<b>Oleamide DEA</b>
<b>DEA-cetyl phosphate</b>	<b>Sodium laureth sulphate</b>
<b>Diethanolamine (DEA)</b>	<b>Sodium lauryl sulphate</b>
<b>lauryl sulphate</b>	<b>Stearamide MEA</b>
<b>Glyceryl laurate</b>	<b>Triethanolamine (TEA)</b>
	<b>lauryl sulphate</b>

**2 If your regular products** contain any of these ingredients you should photocopy these pages, highlight the worrying ingredients and write to the manufacturer's customer services department asking them why, given that milder, safer and equally effective detergents such as those below exist, they are using these ingredients in their product. Ask the manufacturer to send a copy of their reply to the *Ecologist*, or failing that pass the reply you do get on to us, as we will be monitoring all feedback for future investigations and campaigns.



<b>Amphoteric-2</b>	<b>Lauryl glucoside</b>
<b>Amphoteric-6</b>	<b>Polysorbate 20</b>
<b>Amphoteric-20</b>	<b>Polysorbate 40</b>
<b>Cocoa betaine</b>	<b>Sodium cocoyl isethionate</b>
<b>Cocoa glucoside</b>	<b>Sodium</b>
<b>Cocamidopropyl hydroxysultaine</b>	<b>lauraminopropionate</b>
<b>Decyl glucose</b>	<b>Sorbitan laurate</b>
<b>Decyl polyglucose</b>	<b>Sorbitan palmate</b>
<b>Lauryl betaine</b>	<b>Sorbitan stearate</b>

**To meet the UK's energy needs from local, clean, renewable sources**

In the UK we need to move from our dependence on non-renewable, air polluting, climate changing, centrally generated, hugely inefficient and increasingly expensive sources of energy – gas (40%), coal (30%), nuclear (20%), oil (5%) to non polluting, small scale energy generated as close to users as possible.

**HOW?**

Supplying the current (and expected increase) energy demand in the UK, whilst keeping prices for energy low is impossible. We either confront this and start to adapt or we stick our heads in the sand and moan about the inexorable rise in our energy bills.

Each one of us, starting at home and then moving out into our local communities and workplaces, needs to:

**1** Reduce our energy demand  
**2** Switch & localise our energy supply:

**2.1** Switch our energy supply to Ecotricity

**2.2** Localise our energy supply, individually and in our communities.

*The Ecologist* and Ecotricity have teamed up to make this transition, from high energy to low energy use, at home (and at work) as easy as possible. Our combined research and practical expertise will ensure that the options we recommend for reducing demand and generating your own supply will work and won't cost a fortune.

# STEP 1: SWITCH YOUR ENERGY SUPPLIER TODAY

Regardless of where you live, you can make a real difference simply by switching to Ecotricity

If we are to believe the press, most people would be horrified to have one huge wind turbine dominating their picture perfect Norfolk village, let alone two. And yet the people of Swaffham appear to love them both.

When Ecotricity mailed 100,000 households in Breckland asking residents to say 'Yes' or 'No' to more wind turbines as part of the public consultation on plans for Swaffham 2, around 89% of the 9,000 respondents voted 'Yes'. Construction started in April 2003 and Swaffham 2 was completed on 18th July 2003. At the time of building it was the UK's tallest onshore wind turbine. Now Principal Planning Officer, Greg Britton is looking forward to eight more turbines going up near North Pickenham, a small village four miles South East of Swaffham.

"The biggest objector to the erection of wind turbines in Norfolk was me. I had never seen one other than in a photograph but I knew that they were wrong for Norfolk. In meetings with Ecotricity I was the one saying 'No'. I watched the erection of Swaffham 1 and upon its completion I saw a graceful structure which contrary to my earlier views did not detract from the historic character of the town or the surrounding area. Subject to the assessments usual to this type of application, I now support the use of wind energy in Breckland for the production of electricity.. "



Together the two turbines generate enough electricity to supply 75% of Swaffham's total domestic electricity requirements, boosting Norfolk's total wind power by 30%.

Is this the first case of twenty first century witchcraft, or the down to earth, practical approach of one man, Dale Vince, founder of Ecotricity?

For much of the 1980's Dale's life resembled the character in Chitty Chitty Bang Bang, Caractacus Potts – nothing excited him more than building something from scratch, in particular small windmills to generate electricity, using the power

to charge batteries and power lights.

The 1990's saw Dale welding his own wind monitoring tower as part of a resource study – in essence to judge whether the hilltop on which he lived had sufficient wind to make turbine construction viable. Companies such as Scottish Power began commissioning him to make these wind-monitoring towers, the money from which he ploughed back into establishing Western Windpower, now Nexgen Wind (Europe's leading wind monitoring company today).

Dale also researched and met with buyers of electricity,

at the time the Midlands Electricity Board (MEB), and was laughed at and offered a totally uncompetitive price for his 'green electricity' he was proposing to generate. So in 1995, with planning permission close for his first turbine, Dale established the supply company Renewable Energy Co., Ltd (now Ecotricity) to supply green energy initially to business customers.

Ecotricity was the first company anywhere in the world to build only new renewable capacity, from the wind, and to sell that green energy direct to customers. The intervening years have found Dale, and Ecotricity chalking up regular milestones, chipping away at the proportion of our electricity created from burning fossil fuels.

**1996: UK's first direct drive variable speed turbine**

Ecotricity revolutionised turbine design in the UK by introducing the first direct drive, variable speed turbine. Direct drive = no gearbox, meaning that the primary source of noise nuisance from a turbine is removed. Variable speed = blades that move in harmony with the wind, matching wind speed – both reducing noise and increasing efficiency. At low wind speeds, Ecotricity turbines produce half the noise of conventional turbines with gearboxes.

**1999: The UK's first megawatt turbine, throwing away the height rule book**

Ecotricity went against received wisdom, and the realities of planning at the time, to launch the UK's first 1.8MW turbine standing 65m high at the Ecotech Centre at Swaffham in Norfolk.

**2001: The UK's first totally unsubsidised turbine**

The UK's first fully commercial turbine built without government subsidy was launched at Sainsbury's East Kilbride depot, where the turbine powers 50% of the depot's energy needs. This proved to government and industry that renewable energy in the UK could be built without government subsidy.

**2004: London's first wind turbines launched by Ecotricity**

Since July 2004, anyone driving a new diesel Ford or Jaguar is driving a car whose engine was 100% produced using wind energy from Ecotricity. The biggest and most ambitious corporate wind power scheme to date in the UK was launched, with two 2MW turbines generating enough clean green electricity to power 4,000 homes, and powering Ford's clean diesel factory at Dagenham.

**2005: Ecotricity launches the UK's most visible turbine**

Ecotricity's latest project on an urban brownfield site at GreenPark (junction 11 of the M4 in Reading) will now be seen by an estimated 60 million passers by each year.

Ecotricity is the only energy supplier in the UK dedicated solely to building new sources of green energy and selling that power directly to end customers. What's more it isn't beholden to the market as its owned 100% by Dale Vince – so no dividends to pay out, no shareholders to please. Dale just gets a salary like everybody else (and he's not the highest earner either) meaning every penny Ecotricity makes is ploughed back into building the best wind turbines money can buy.



**HOME ENERGY CAMPAIGN**

in association with Ecotricity

As far as you the consumer of electricity is concerned, switching your electricity supply to Ecotricity is painless, and will mean no disruption to your supply. What's more Ecotricity doesn't charge a premium. It believes clean green energy and the opportunity to support investment in new renewable capacity should be available to anyone, no matter how rich or poor they are, and commits to simply match the price of the main electricity supplier in each region of the UK. And with no outsourced call centres, you won't be hanging on the phone going through voice menus. You call Ecotricity and you get a real environmental enthusiast on the telephone. Bottom line - switch your electricity supply to Ecotricity, and know, that for every £1 you spend on your electricity with them, they will be spending £3 on building the best new renewable energy sources money can buy.

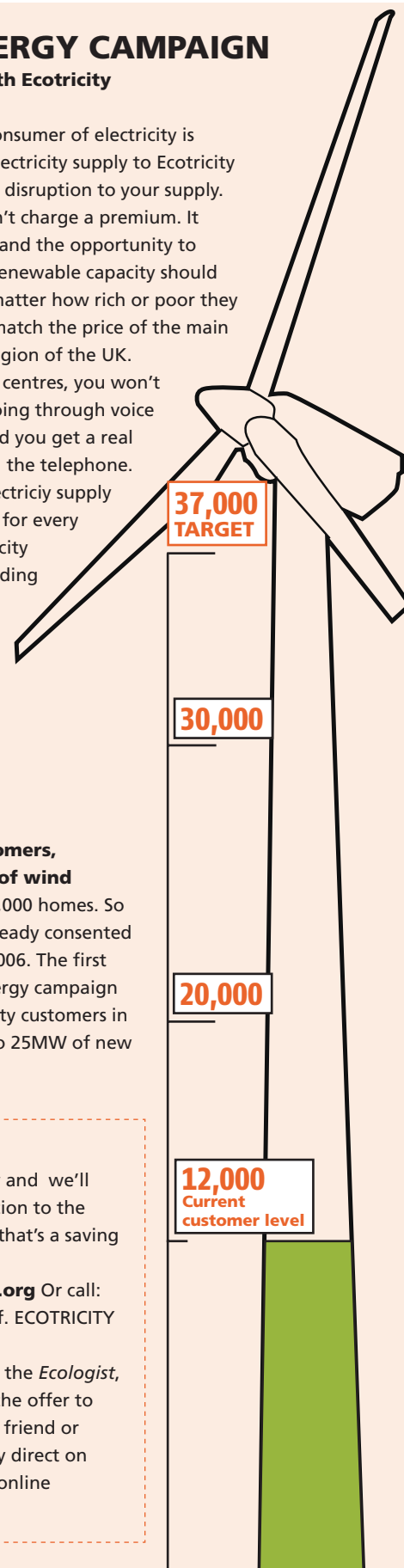
**For every 1,000 new customers, Ecotricity can build 1MW of wind energy,** enough to supply 1,000 homes. So far Ecotricity have 24MW already consented and planned to be built in 2006. The first target in the joint Home Energy campaign is to add 25,000 new Ecotricity customers in 2006, which would equate to 25MW of new capacity.

**SPECIAL OFFER**

Sign up to Ecotricity today and we'll give you a 1 year subscription to the *Ecologist* for just £12.95! (that's a saving of £22)

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# 59% AND COUNTING

BY GEORGE PILKINGTON

Biodegradable Waste (BDW), 'plants and animals', comprises an amazing 59 per cent of your household waste. Do you simply throw yours in the bin? If so you...

...are sending 59 per cent of your household waste on unnecessary and increasingly lengthy journeys by truck, which result in: climate changing CO<sub>2</sub> emissions; asthma-inducing exhaust and waste dust particles; noise pollution; smell; road congestion; and increasing waste collection costs, which are passed on to you in council tax charge increases....**AND**

**IF YOUR BDW ENDS UP IN LANDFILL** ...it will be costing between £8 -17 per tonne to be landfilled, added to which there is now a landfill tax of £18 per tonne, which is set to nearly double to £35 per tonne by 2010 – both charges being passed on to you in annual council tax rises. And once buried will produce Landfill gases (LFG): LFG consists mainly of methane and carbon dioxide (both greenhouses gases). LFG also contains NMOCs and VOCs, compounds associated with stratospheric ozone depletion, air quality issues, eg. smog, and react to sunlight to form ground-level ozone. And organic acids in your 59 per cent decomposing BDW dissolve heavy metals in the landfill site creating a potentially toxic cocktail mixture or leachate, that at very small quantities can cause serious damage to the environment, plants, soil life, water life and many other organisms...

**AND IF INCINERATED**...will be costing your council upwards of £47 per tonne, and result in fly ash that can contain dioxins, which are extremely toxic – particularly to infants and unborn babies.

## OR POSSIBLY YOU:

### ...HAVE KERBSIDE COLLECTION OF YOUR BDW...

Unlikely given that most councils refuse to collect household food waste since the Animal By-Products Orders (ABPO) was enacted in 1999 (a direct result of the foot and mouth epidemic). Even if you do, home collection still means driving 59 per cent of your waste around in polluting lorries.

### ...THROW YOUR BDW INTO A KITCHEN WASTE DISPOSAL UNIT...

This simply diverts your BDW 'problem' from landfill to a water treatment works. What's more, it will not recycle your cornflakes box, uses electricity to operate it, and uses one invaluable resource, water, to flush another invaluable resource, BDW, away.

### ...GARDEN COMPOST IT...

OK provided you manage the compost properly otherwise the food waste will build up, attracting flies and vermin. For this reason, most people do not compost their food waste.

### SO, WHAT'S LEFT?

### WORM COMPOSTING

Worm composting your BDW uses no energy ■ Means fewer waste collection journeys = lower CO<sub>2</sub> emissions; reduced road congestion; lower exhaust pollution; less noise pollution ■ Less landfill gas – methane and CO<sub>2</sub> = reducing climate change ■ Reduced leachates = cleaner water sources and surrounding countryside ■ Less incineration = fewer dioxins; less energy used to burn waste = less CO<sub>2</sub> emissions ■ Less land needed for landfill sites ■ You'll become a farmer! More connected with nature and the natural processes of life. And you are making a difference – feeling of empowerment ■ Fall in love with your worms – it can be addictive as you want to make sure that they are happy ■ Lower council tax bills – certainly lower landfill taxes and lower gate fees ■ Produces the best soil in the world for yours or your neighbours' plants ■ Increase your crop yields – why buy when you can grow? ■ Have beautiful healthy blooms and be the envy of your neighbours! ■ Save money on bagged compost and chemical fertilizers ■ Educate your children live! ■ Less water and less time spent watering – more time for relaxing in your garden! ■ There's no excuse not too – it's easy.

### [A] WHAT GOES IN...

All your BDW including: Bread, pastry, biscuits, cereals, pasta, flour products, breakfast cereals (and their boxes), cakes and puddings, fruit and veg peelings, dried foods, chocolate, casseroles, stews and soups, leftovers from breakfast, lunch and evening meals, onions and their skins, coffee grounds, tea and tea bags, (even worms enjoy a brew!) AND cardboard – from egg boxes to loo rolls, cotton, wool, old clothes, grass cuttings, dead flowers and tree leaves, wood sawdust and shavings, newspaper and a lot more besides!

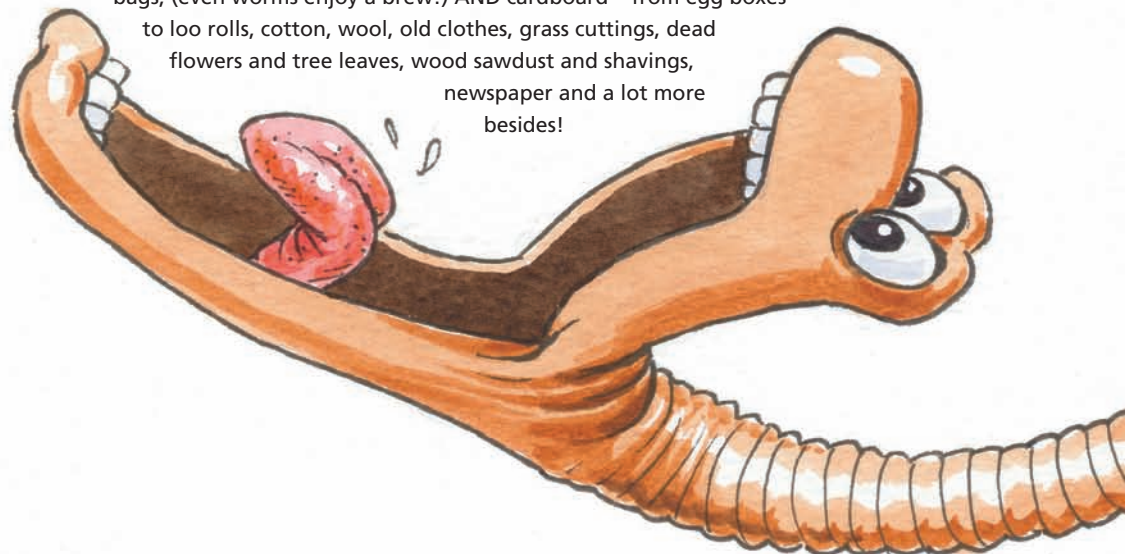


ILLUSTRATION BY ADRAIN TEAL



## [B] BETWEEN ENTRY & EXIT: A NATURAL MIRACLE?

As up to 59 per cent of your household waste or BDW passes through your worms' guts, microbe numbers massively increase. And these microbes are of paramount importance in the recycling of nutrients in the soil, such as nitrogen, sulphur, phosphorous and trace elements. It is only through the actions of soil microbes that nutrients in organic matter are broken down and returned to the soil, liberated for plants and for use by other microbes. Life on earth depends on this process, and a single gram of healthy fertile soil contains upwards of a million microbes. And it is these microbes massively increasing in the guts of your worms that speed the decomposition of your BDW, without which it takes a very long time. Quite simply: No BDW, no microbes – no microbes, no worms. None of either, no living soil. In essence your worms, and the BDW you feed them, are performing a natural miracle – transforming expensive polluting waste into living soil... WOW!



## [C] END PRODUCT = VERMICOMPOST

Vermicompost is a fine textured, dark peat-like material with excellent structure, porosity, aeration, drainage and moisture-holding capacity that has a similar appearance and many of the characteristics of peat (without having to destroy peat bogs to obtain it).

**Increase in plant yields:** Research data shows that vermicompost has increased yields of 14 per cent in lettuces, 40 per cent in broccoli, 80 per cent in tomatoes, and 259 per cent in carrots.

**Contains natural plant stimulants:** Vermicompost contains natural plant stimulants/hormones, eg auxins, which promote root formation and bud growth.

**Helps to fight plant diseases:** The high concentrations of humus in vermicompost helps to prevent harmful plant pathogens, fungi, nematodes and bacteria. Vermicompost also suppresses diseases such as club root and white rot.

**Encourages rapid seed germination:** Research has shown that cauliflower seed emergence was uniformly earlier, with hardier bigger seedlings ready to plant out up to two weeks earlier and that were more resistant to downy mildew.

**Best imaginable potting soil for greenhouses:** Being a natural product, it does not burn plants or their roots, or even the most delicate of flowers. And having water-soluble nutrients, the benefits are immediately released to plants after watering as they slowly leach down to the roots.

**Increases mycorrhizal fungi activity:** In several crops vermicompost was shown to increase the uptake of Vesicular Arbuscular Mycorrhizal fungi (VAM), fungi that live in the soil and form mutually beneficial relationships with plants.

**Produces and promotes a healthy root mass:** Trials clearly showed a four-fold increase in root mass, length, girth and secondary development when grown in vermicompost. The plants also established much quicker with such a strong healthy root structure.

**Improves soil structure:** Vermicompost contains a high percentage of humus, which helps soil particles bind together into clusters, creating channels for the passage of water and air. Worms also produce mucus and this is deposited in the vermicompost, again giving it a friable and crumbly structure. Means less watering as it remains moist for longer, and is capable of holding two to three times its own weight in water.

**Produces a liquid 'Golden Soil' – Vermi tea:** A brew of vermi-tea, made from fresh vermicompost steeped in water for a short period, is full of nutrients, beneficial microbes and, has been found to bring natural fungal disease-suppressant qualities when sprayed onto the leaves of plants.

**CONCLUSION:** The battle for the earth begins with you at home, in your house, kitchen and garden. Recycling your food waste, and perhaps even growing some vegetables with the vermicompost, is a small but beautiful step in the right direction. Why should we pay through direct or indirect taxes to clean up our landfill BDW problems when we could use the valuable resource for our own use?

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# TRENCH WARFARE

'I have nothing more to offer my fruit and vegetables than blood, toil, sweat, and tears,' and with these immortal words ringing round his allotment patch, **Paul Kingsnorth** sets out on his campaign to get us out of supermarkets and into allotments.

Three years ago, I got myself an allotment. I didn't know the first thing about growing vegetables, but I persevered because I was enchanted by the thought of growing my own food, of understanding the soil and of being at least in some way self-sufficient in an increasingly consumerist society.

And it worked. Now, though by no means an expert, I know what I'm doing. Getting an allotment was one of the best decisions I ever made and, like all converts, I am in evangelical mood.

So now I want you to get an allotment too; or, if you've already got one, I want you to get another one, or to tell a friend about them. Allotments are one of Britain's best-kept secrets, and it's time they became the basis for a popular movement of people who are sick to death of the industrial food machine. So let's make it happen.

Every month I'll be writing about allotments in this column; what I'm doing on mine, what others are up to, what's good for the time of year, how to avoid stupid but easy mistakes, and the various trials and tribulations of growing your own food. This is emphatically not a gardening column – I couldn't give a stuff about herbaceous perennials or how to achieve a weed-free lawn. This, like owning an allotment itself, is a political act. Come on, take a stand with me – you won't regret it.

Let's start from the beginning, then: how do you get an allotment and what can you do with it? The first question is easy to answer. Every local council has an obligation to provide allotments and, unless you live in one of the big cities, there's usually no waiting list. You pay a minimal rent every year – mine costs me

sixteen quid – and that's it. You're in.

As for the second question – mostly, you are only limited by your imagination. Each allotment is run by an association that decides its rules, so each has different guidelines, and sets of dos and don'ts, which are worth checking out before you decide to rent a plot. But between them, the diversity of things that people get up to on their plots is amazing.

Aside from the standard lines of cabbages and sprouts, I know allotments on which people keep chickens, make public sculptures, and experiment with creating new species of pea. I've heard of plots used entirely to grow tobacco or breed prize rabbits. Rent yourself a plot and you have yourself a source of food, fun, exercise, experimentation, retreat and general mucking about. Hidden behind your raspberry bushes and compost bins, you can get up to anything you like, assuming it's legal.

So what do I get up to? Naturally it depends on the time of year. On my vegetable plot, not a lot grows in the deep midwinter. I currently have some leeks in – they seem to withstand everything the weather throws at them – and some broccoli plants, which are being attacked daily by pigeons despite the nets I've put

over them. I'm also having a running battle with an unseen rat, which has been digging its way into my compost heap and eating my lovingly collected kitchen waste.

But mostly, the early months of the year are a fallow period for vegetable growers, as you wait for the spring to arrive. My plot, though, is only one of my projects. I have another plot as well on which, with a few friends, I'm establishing an orchard of rare fruit. Mostly we're growing apples. The native fruit of England is having a hard time; of the 6,000 traditional varieties, only a few are sold in supermarkets, and many are in danger of extinction. So we're growing 24 varieties of apple, all of them rare and unusual, their very names a poetry of place: Kingston Black, Miller's Seedling, Irish Peach, Rev W. Wilkes, Ribston Pippin. And it's not just apples. We have gooseberries, plums, damsons, figs, medlars (a strange medieval fruit), and berries of all kinds. Within a couple of years we'll be self-sufficient in fruit all year round. This is the perfect time of year for planting fruit trees, and our orchard is now fully laid out. I can't wait for autumn.

But I'm going to have to. While I do, please send me any allotment stories, tips, questions or suggestions you have and I'll share them out here. Food and freedom here we come!

■ Contact me at [paul@paulkingsnorth.net](mailto:paul@paulkingsnorth.net)



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#### OUR VISION

Vibrant, self-sustaining communities, full of locally owned and supplied independent shops and businesses providing all a community's diverse needs.

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Chain stores and supermarkets are choking the life out of communities. Money, once circulated within communities, now lines the pockets of distant head offices and shareholders. Where once there were towns and villages with unique identities, there are now identikit, one-size-fits-all high streets.

#### WHAT CAN WE DO?

We all need to turn the tide of blandness and buy from our local independent shops. For those of us bereft of genuine local shops, use this guide to shop ethically via the web and bring us one step closer to the vibrant real communities we long for.

#### WHY THESE ONES?

These organisations have been carefully chosen to include inspiring and independent producers and retailers who are committed to offering products and services that:

- are non toxic to you and the environment
- ensure highest standards of animal welfare
- support local communities
- offer a fair wage and decent working conditions to all parts of the supply chain
- use minimal packaging
- minimise transport miles.

#### FEEDBACK

Please tell us ([gsg@theecologist.org](mailto:gsg@theecologist.org)), and them, what you think of them. If you're unhappy, don't move on silently. We need all the support we can get!

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- Beaming Baby [www.beamingbaby.com](http://www.beamingbaby.com)
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- Smile Child [www.smilechild.co.uk](http://www.smilechild.co.uk)
- So Organic [www.soorganic.com](http://www.soorganic.com)
- Spirit of Nature [www.spiritofnature.co.uk](http://www.spiritofnature.co.uk)
- Twinkle Twinkle [www.twinkleontheweb.co.uk](http://www.twinkleontheweb.co.uk)

**CLOTHING**

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- Clothworks [www.clothworks.co.uk](http://www.clothworks.co.uk)
- Cut4Cloth [www.cut4cloth.co.uk](http://www.cut4cloth.co.uk)
- Gossypium [www.gossypium.co.uk](http://www.gossypium.co.uk)
- Greenscene [www.greenscene.wahmall.co.uk](http://www.greenscene.wahmall.co.uk)
- Greensleeves [www.greensleevesclothing.com](http://www.greensleevesclothing.com)
- Huggababy [www.huggababy.co.uk](http://www.huggababy.co.uk)
- Organics for Kids [www.organicsforkids.com](http://www.organicsforkids.com)
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- The Nappy Lady [www.thenappylady.co.uk](http://www.thenappylady.co.uk)

**Eco disposable**

- Natural Baby Company [www.naturalbabycompany.com](http://www.naturalbabycompany.com)
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- The Bottom Line [www.thebottomlinenappies.co.uk](http://www.thebottomlinenappies.co.uk)
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Lanka Kade	<a href="http://www.lankakade.co.uk">www.lankakade.co.uk</a>
Myriad	<a href="http://www.myriadonline.co.uk">www.myriadonline.co.uk</a>
Toys for Children	<a href="http://www.woodentoysforchildren.co.uk">www.woodentoysforchildren.co.uk</a>
Tulip Toys	<a href="http://www.tuliptoy.com">www.tuliptoy.com</a>



**DON'T MISS THE ECOLOGIST'S NO EXCUSE CLOTH NAPPY TRIAL PACK SEE PAGE 83.**

Tom's of Maine	<a href="http://www.tomsofmaine.com">www.tomsofmaine.com</a>
Urtekram	<a href="http://www.urtekram.dk">www.urtekram.dk</a>
Weleda	<a href="http://www.weleda.co.uk">www.weleda.co.uk</a>
21st Century Health	<a href="http://www.21stcenturyhealth.co.uk">www.21stcenturyhealth.co.uk</a>
<b>ACNE REMEDIES</b>	
Comvita Skin Clear	<a href="http://www.comvita.com">www.comvita.com</a>
Essential Care	<a href="http://www.naturalnursery.co.uk">www.naturalnursery.co.uk</a>
Pukka Herbs Skin Formula	<a href="http://www.pukkaherbs.com">www.pukkaherbs.com</a>
<b>DEODORANT</b>	
PitRok Ltd.	<a href="http://www.pitrok.co.uk">www.pitrok.co.uk</a>
<b>HEALTH AND HOMEOPATHY SPECIALISTS</b>	
Optima	<a href="http://www.optimahealthcare.co.uk">www.optimahealthcare.co.uk</a>
Pure Potions	<a href="http://www.purepotions.co.uk">www.purepotions.co.uk</a>
Rio Health Direct	<a href="http://www.riohealth.co.uk">www.riohealth.co.uk</a>
Simply Nature	<a href="http://www.simplynature.co.uk">www.simplynature.co.uk</a>
The Organic Health Shop	<a href="http://www.baughdell.co.uk">www.baughdell.co.uk</a>
<b>MAKE YOUR OWN SKIN CARE AND COSMETICS</b>	
Aromatic	<a href="http://www.aromatic.co.uk">www.aromatic.co.uk</a>
Bay House Aromatics	<a href="http://www.bay-house.co.uk">www.bay-house.co.uk</a>
Cosmetics at Home	<a href="http://www.cosmeticsathome.co.uk">www.cosmeticsathome.co.uk</a>
New Directions	<a href="http://www.newdirectionsuk.com">www.newdirectionsuk.com</a>
The Soap Tub	<a href="http://www.meltsandpoursupplies.com">www.meltsandpoursupplies.com</a>
<b>PERFUME</b>	
Aromasciences	<a href="http://www.aromasciences.com">www.aromasciences.com</a>
Ascent	<a href="http://www.hayspace.co.uk">www.hayspace.co.uk</a>
Dolma	<a href="http://www.veganvillage.co.uk/dolma">www.veganvillage.co.uk/dolma</a>
Nature's Gift	<a href="http://www.naturesgift.com">www.naturesgift.com</a>
Profumo	<a href="http://www.profumo.it">www.profumo.it</a>
<b>SANITARY PRODUCTS</b>	
Cloth San Pro	<a href="http://www.ragbags.co.uk">www.ragbags.co.uk</a>
Natracare	<a href="http://www.natracare.com">www.natracare.com</a>
Menses	<a href="http://www.menses.co.uk">www.menses.co.uk</a>
The Mooncup	<a href="http://www.mooncup.co.uk">www.mooncup.co.uk</a>
Pads by Vicki	<a href="http://www.ecolady.co.uk">www.ecolady.co.uk</a>
<b>SOAPS</b>	
Caurnie Soaperie	<a href="http://www.caurnie.com">www.caurnie.com</a>
Dendera	<a href="http://www.dendera.net">www.dendera.net</a>

Simply Soaps	<a href="http://www.simplysoaps.com">www.simplysoaps.com</a>
The Soap Kitchen	<a href="http://www.thesoapkitchen.co.uk">www.thesoapkitchen.co.uk</a>
<b>SUN PROTECTION</b>	
Ecolani	<a href="http://www.ecolani.com">www.ecolani.com</a>
Yaoh	<a href="http://www.yaoh.co.uk">www.yaoh.co.uk</a>
<b>TOOTHPASTE &amp; MOUTHWASH</b>	
Kingfisher	<a href="http://www.kingfishertoothpaste.com">www.kingfishertoothpaste.com</a>
Sarakan	<a href="http://www.sarakan.com">www.sarakan.com</a>

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Auravita	<a href="http://www.auravita.com">www.auravita.com</a>
Avalon Organics	<a href="http://www.avalonorganics.com">www.avalonorganics.com</a>
Avea	<a href="http://www.avea.co.uk">www.avea.co.uk</a>
Aveda	<a href="http://www.aveda.com">www.aveda.com</a>
Barefoot	
Botanicals	<a href="http://www.barefoot-botanicals.com">www.barefoot-botanicals.com</a>
Beauty Naturals	<a href="http://www.beautynaturals.com">www.beautynaturals.com</a>
Body Organic	<a href="http://www.bodyorganic.co.uk">www.bodyorganic.co.uk</a>
Cioccolatina	<a href="http://www.cioccolatina.co.uk">www.cioccolatina.co.uk</a>
Comfort and Joy	<a href="http://www.comfortandjoy.co.uk">www.comfortandjoy.co.uk</a>
Dr. Hauschka Natural Skin Care	<a href="http://www.drhauschka.co.uk">www.drhauschka.co.uk</a>
Duchy Originals	<a href="http://www.duchyoriginals.com">www.duchyoriginals.com</a>
Earthbound Organics	<a href="http://www.earthbound.co.uk">www.earthbound.co.uk</a>
Eliminator	<a href="http://www.anewlife.co.uk">www.anewlife.co.uk</a>
Essential Care	<a href="http://www.essential-care.co.uk">www.essential-care.co.uk</a>
Essentially Yours	<a href="http://www.essentially-yours.co.uk">www.essentially-yours.co.uk</a>
Faith in Nature	<a href="http://www.faithinnature.com">www.faithinnature.com</a>
Goodness Direct	<a href="http://www.goodnessdirect.co.uk">www.goodnessdirect.co.uk</a>
Green Fibres	<a href="http://www.greenfibres.co.uk">www.greenfibres.co.uk</a>
Green People	<a href="http://www.greenpeople.co.uk">www.greenpeople.co.uk</a>
Hemp Garden	<a href="http://www.hempgarden.co.uk">www.hempgarden.co.uk</a>

Honesty	<a href="http://www.honestycosmetics.co.uk">www.honestycosmetics.co.uk</a>
Cosmetics	
Honeybee Gardens	<a href="http://www.honeybeegardens.com">www.honeybeegardens.com</a>
John Masters Organics	<a href="http://www.johnmasters.com">www.johnmasters.com</a>
Lavera	<a href="http://www.lavera.co.uk">www.lavera.co.uk</a>
Living Nature	<a href="http://www.livingnature.com">www.livingnature.com</a>
Logona	<a href="http://www.logona.co.uk">www.logona.co.uk</a>
Mariposa Alternative Bodycare	<a href="http://www.mariposa-alternative-bodycare.co.uk">www.mariposa-alternative-bodycare.co.uk</a>
Mother Earth	<a href="http://www.motherearth.co.uk">www.motherearth.co.uk</a>
My Being Well	<a href="http://www.mybeingwell.com">www.mybeingwell.com</a>
Naturisimo	<a href="http://www.naturisimo.com">www.naturisimo.com</a>
Neal's Yard	<a href="http://www.nealsyardremedies.com">www.nealsyardremedies.com</a>
Nirvana Natural	<a href="http://www.nirvananatural.com">www.nirvananatural.com</a>
Organic Blue	<a href="http://www.organicblue.com">www.organicblue.com</a>
Organic Botanics	<a href="http://www.organicbotanics.com">www.organicbotanics.com</a>
Organica J	<a href="http://www.organicaj.co.uk">www.organicaj.co.uk</a>
Potions and Possibilities	<a href="http://www.potions.co.uk">www.potions.co.uk</a>
Primavera Aromatherapy	<a href="http://www.primavera.co.uk">www.primavera.co.uk</a>
Pure Nuff Stuff	<a href="http://www.purenuffstuff.co.uk">www.purenuffstuff.co.uk</a>
REN	<a href="http://www.renskincare.com">www.renskincare.com</a>
So Organic	<a href="http://www.soorganic.com">www.soorganic.com</a>
Spiezia Organics Ltd	<a href="http://www.spieziaorganics.com">www.spieziaorganics.com</a>
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Way	<a href="http://www.thereustbeabetterway.co.uk">www.thereustbeabetterway.co.uk</a>
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 Charity Connections [www.charityconnections.co.uk](http://www.charityconnections.co.uk)  
 Charity Job [www.charityjob.co.uk](http://www.charityjob.co.uk)  
 Countryside Jobs Service [www.countryside-jobs.com](http://www.countryside-jobs.com)  
 Eden Recruitment [www.edenrecruitment.co.uk](http://www.edenrecruitment.co.uk)  
 Ends Environmental Job Search [www.ends.co.uk/jobs/about.htm](http://www.ends.co.uk/jobs/about.htm)  
 Environment Job [www.environmentjob.co.uk](http://www.environmentjob.co.uk)  
 Evergreen Resources [www.evergreen.org.uk](http://www.evergreen.org.uk)  
 Execucare [www.execucare.com](http://www.execucare.com)

Getalife [www.prospects.ac.uk](http://www.prospects.ac.uk)  
 One World [www.oneworld.net](http://www.oneworld.net)  
 The Ethical Careers Service [www.peopleandplanet.org/ethicalcareers/](http://www.peopleandplanet.org/ethicalcareers/)

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Action Without Borders [www.idealists.org](http://www.idealists.org)  
 Do-It [www.do-it.org](http://www.do-it.org)  
 Environment Job [www.environmentjob.co.uk](http://www.environmentjob.co.uk)  
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 UNA Exchange [www.una-exchange.org](http://www.una-exchange.org)  
 Volunteering England [www.volunteering.org.uk](http://www.volunteering.org.uk)  
 Volunteering Development Agency [www.volunteering-ni.org](http://www.volunteering-ni.org)

Inbi Hemp [www.inbi-hemp.co.uk](http://www.inbi-hemp.co.uk)  
 Natural Collection [www.naturalcollection.com](http://www.naturalcollection.com)  
 One World is Enough [www.one-world-is-enough.net](http://www.one-world-is-enough.net)  
 Organic Attire Co [www.organicattire.co.uk](http://www.organicattire.co.uk)  
 People Tree [www.ptree.co.uk](http://www.ptree.co.uk)

Schmidt Natural Clothing [www.naturalclothing.co.uk](http://www.naturalclothing.co.uk)  
 Siesta Crafts [www.siestacrafts.co.uk](http://www.siestacrafts.co.uk)  
 Spirit of Nature [www.spiritofnature.co.uk](http://www.spiritofnature.co.uk)  
 The Hemp Store [www.thehempstore.co.uk](http://www.thehempstore.co.uk)

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 Benjamin Shine [www.benjaminshine.com](http://www.benjaminshine.com)  
 Bishopston Trad. Comp [www.bishopstontrading.co.uk](http://www.bishopstontrading.co.uk)  
 Ciel Ltd. [www.thenaturalstore.co.uk](http://www.thenaturalstore.co.uk)  
 Clothworks [www.clothworks.co.uk](http://www.clothworks.co.uk)  
 Enamore [www.enamore.co.uk](http://www.enamore.co.uk)  
 From Somewhere [www.fromsomewhere.co.uk](http://www.fromsomewhere.co.uk)  
 Juste [www.juste.co.uk](http://www.juste.co.uk)  
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 Keep and Share [www.keepandshare.co.uk](http://www.keepandshare.co.uk)

Natural Dye Company [www.naturaldyecompany.com](http://www.naturaldyecompany.com)  
 Natural Store [www.thenaturalstore.co.uk](http://www.thenaturalstore.co.uk)  
 Nature's Mistress [www.naturesmistress.co.uk](http://www.naturesmistress.co.uk)  
 Nomads Clothing [www.nomadsclothing.com](http://www.nomadsclothing.com)  
 Osvomode [www.osvomode.com](http://www.osvomode.com)  
 Romp [www.romp.uk.com](http://www.romp.uk.com)  
 Sari [www.saricouture.com](http://www.saricouture.com)  
 Unicorn Design [www.unicorndesign.net](http://www.unicorndesign.net)

**BAGS**

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 Refab [www.refab.co.uk](http://www.refab.co.uk)  
 Suitcase [www.suitcase-london.com](http://www.suitcase-london.com)

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 Isle of Mull Weavers [www.isleofmullweavers.co.uk](http://www.isleofmullweavers.co.uk)

**JEWELRY**

Jungleberry [www.jungleberry.co.uk](http://www.jungleberry.co.uk)

**LINERGIE**

Greenknickers [www.greenknickers.org](http://www.greenknickers.org)

Buttress and Snatch [www.buttressandsnatch.co.uk](http://www.buttressandsnatch.co.uk)

**SHOES**

Beyond skin [www.beyondskin.co.uk](http://www.beyondskin.co.uk)

Birkenstock [www.birkenstock.com](http://www.birkenstock.com)

Black Spot Sneakers [www.blackspotbournemouth.tripod.com](http://www.blackspotbournemouth.tripod.com)

Fair Deal Trading [www.fairdealtrading.co.uk](http://www.fairdealtrading.co.uk)

Freerangers [www.freerangers.co.uk](http://www.freerangers.co.uk)

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Terraplana [www.terraplana.com](http://www.terraplana.com)

The Natural Shoe Store [www.thenaturalshoestore.com](http://www.thenaturalshoestore.com)

Vegetarian [www.vegetarian-shoes.co.uk](http://www.vegetarian-shoes.co.uk)

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Glow4Life [www.glow4life.com](http://www.glow4life.com)

Hug [www.hug.co.uk](http://www.hug.co.uk)

Mongrel Clothing [www.mongrelclothing.co.uk](http://www.mongrelclothing.co.uk)

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Green apple [www.the-green-apple.co.uk](http://www.the-green-apple.co.uk)  
 Green Fibres [www.greenfibres.co.uk](http://www.greenfibres.co.uk)  
 Hebridean Woolhouse [www.hebrideanwoolhouse.com](http://www.hebrideanwoolhouse.com)  
 Hemp Union [www.hemp-union.karoo.net](http://www.hemp-union.karoo.net)  
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The Navdanya course on water democracy is being held in Dehra Dun from February 3rd to 10th, 2006, to build the capacity of citizens and activists to resist water privatization, defend water as a common property resource and a public good and promote the conservation and sustainable and equitable use of water so that there can be water for all for all times.

**Faculty:** Dr. Vandana Shiva, Commander Sureshwar Singh, Dr. Ramaswamy Iyer, Mr. Anupam Mishra, Mr. Rajendra Singh

The course will be preceded by a two day conference "Building Water Democracy, Resisting Water Privatization" on February 1st and 2nd, 2006, at Indian Social Institute, Lodhi Road, New Delhi. Following the course participants have an option of joining a Ganga yatra, a journey for saving the Ganges from pollution, diversion and privatization.



## ENERGY

'...installing a rainwater harvesting system, solar panels and solar thermal heating system in my own home, I've reduced emissions by 50 per cent and cut my energy, power and water costs by more than half – forever.' ERIC HAWKINS, FOUNDER OF POWERTECH SOLAR

### ENERGY EFFICIENCY

Carbon Trust [www.thecarbontrust.co.uk](http://www.thecarbontrust.co.uk)  
Eco-Exmoor [www.eco-exmoor.co.uk](http://www.eco-exmoor.co.uk)  
Energy Saving World [www.energysavingworld.co.uk](http://www.energysavingworld.co.uk)  
National Centre for Business and Sustainability [www.thencbs.co.uk](http://www.thencbs.co.uk)  
Nigel's Eco Store [www.theinsightecostore.com](http://www.theinsightecostore.com)  
Save Energy [www.saveenergyonline.com](http://www.saveenergyonline.com)  
The Organic Energy Company [www.organicenergy.co.uk](http://www.organicenergy.co.uk)

### ELECTRICITY

#### Generation

Dulas Ltd [www.renewable-resources.com](http://www.renewable-resources.com)  
Green Dragon Energy [www.greendragonenergy.co.uk](http://www.greendragonenergy.co.uk)  
Rainbow Solar Trading [www.rainbowtradingpost.co.uk](http://www.rainbowtradingpost.co.uk)  
Sustainable Energy Installations [www.sustainable-energy.org.uk](http://www.sustainable-energy.org.uk)  
Wind and Sun Ltd [www.windandsun.co.uk](http://www.windandsun.co.uk)

#### Light bulbs

Energy Saving World [www.energysavingworld.co.uk](http://www.energysavingworld.co.uk)  
Lampholder 2000 [www.lampholder.co.uk](http://www.lampholder.co.uk)  
Lumin8 [www.lumin8.co.uk](http://www.lumin8.co.uk)  
Nigel's Eco Store [www.theinsightecostore.com](http://www.theinsightecostore.com)

#### Suppliers

Ecotricity [www.ecotricity.co.uk](http://www.ecotricity.co.uk)

### GROUND SOURCE HEAT PUMPS

Conservation Engineering Ltd [www.heating-designs.co.uk](http://www.heating-designs.co.uk)  
Earthwise Scotland Ltd [www.earthwisescotland.co.uk](http://www.earthwisescotland.co.uk)  
Eco Heat Pumps Energy and the Environment [www.energyenv.co.uk](http://www.energyenv.co.uk)  
Geoscience Ltd [www.geoscienceltd.co.uk](http://www.geoscienceltd.co.uk)  
Geothermal Heating International [www.geoheat.co.uk](http://www.geoheat.co.uk)  
Green Systems [www.greensystems.net](http://www.greensystems.net)  
Groenholland UK Ltd [www.groenholland.com](http://www.groenholland.com)  
Ice energy [www.iceenergy.co.uk](http://www.iceenergy.co.uk)

### INSULATION

Kensa Engineering Ltd [www.kensaengineering.com](http://www.kensaengineering.com)  
Polarwall Ltd [www.polarwall.co.uk](http://www.polarwall.co.uk)  
Second Nature [www.secondnatureuk.com](http://www.secondnatureuk.com)  
Skanda UK [www.skanda-uk.com](http://www.skanda-uk.com)

### SOLAR

Energy and the Environment [www.energyenv.co.uk](http://www.energyenv.co.uk)  
Future Heating Ltd [www.future-heating.co.uk](http://www.future-heating.co.uk)  
HiTech Energy Ltd [www.hitechenergy.co.uk](http://www.hitechenergy.co.uk)  
Llanisolar [www.llanisolar.co.uk](http://www.llanisolar.co.uk)

#### The Organic Energy Company

[www.organicenergy.co.uk](http://www.organicenergy.co.uk)  
Power Tech Solar [www.powertech-solar.com](http://www.powertech-solar.com)  
Radiant Energy [www.radiantenergy.co.uk](http://www.radiantenergy.co.uk)  
Rainbow Solar Trading [www.rainbowtradingpost.co.uk](http://www.rainbowtradingpost.co.uk)

#### The Solar Design Company

[www.solar-design.demon.co.uk](http://www.solar-design.demon.co.uk)  
Solarsense UK Ltd [www.solarsense-uk.com](http://www.solarsense-uk.com)  
Solar Twin [www.solartwin.com](http://www.solartwin.com)  
Sun Harvester [www.sun-harvester.co.uk](http://www.sun-harvester.co.uk)  
West Wales Solar Heating [www.solarwales.co.uk](http://www.solarwales.co.uk)

### WOOD FUEL STOVES

3G energi [www.3genergi.co.uk](http://www.3genergi.co.uk)  
Able Fuels Ltd [www.ablefuels.co.uk](http://www.ablefuels.co.uk)  
Beacon Stoves [www.beacon-stoves.co.uk](http://www.beacon-stoves.co.uk)  
Bio Energy Devices [www.bioenergy-devices.co.uk](http://www.bioenergy-devices.co.uk)  
Bioenergy Technology Ltd [www.bioenergy.org](http://www.bioenergy.org)  
Chilli Penguin Stoves [www.chillipenguin.co.uk](http://www.chillipenguin.co.uk)  
Ebc wood fuels [www.ebc-ecofuel.co.uk](http://www.ebc-ecofuel.co.uk)  
Rural Energy Ltd [www.ruralenergy.co.uk](http://www.ruralenergy.co.uk)  
Wood Energy Ltd [www.woodenergyltd.co.uk](http://www.woodenergyltd.co.uk)

Switching to renewable electricity is easy. See page 86.

## FINANCE

In 2004, money invested ethically broke through the £10 billion barrier to stand at £10.6 billion. Investing ethically doesn't mean you have to forgo profit. Ethical funds outperformed mainstream funds by almost 10 per cent from 1999-2004.

### BANKING

Ecology Building Society [www.ecology.co.uk](http://www.ecology.co.uk)  
Co-operative Bank [www.co-operativebank.co.uk](http://www.co-operativebank.co.uk)  
Internet Banking Smile [www.smile.co.uk](http://www.smile.co.uk)  
Kanuk [www.kanuk.com](http://www.kanuk.com)  
Triodos Bank [www.triodos.co.uk](http://www.triodos.co.uk)

### INSURANCE

Co-operative Insurance Society [www.cis.co.uk](http://www.cis.co.uk)  
Ethical Pet Insurance [www.animalfriends.org.uk](http://www.animalfriends.org.uk)  
Nature Save [www.naturesave.co.uk](http://www.naturesave.co.uk)

### LOANS-COMMUNITY AND PRIVATE

Bridges Community Ventures Ltd [www.bridgesventures.com](http://www.bridgesventures.com)  
Charity Bank [www.charitybank.org](http://www.charitybank.org)  
Community Development Finance Association [www.cdfa.org.uk](http://www.cdfa.org.uk)  
Co-operative and Community Finance [www.icof.co.uk](http://www.icof.co.uk)

Ethical Property [www.ethicalproperty.co.uk](http://www.ethicalproperty.co.uk)  
Gloucestershire Development Loan Fund [www.gdlf.co.uk](http://www.gdlf.co.uk)  
Northwest Community Finance [www.northwestcommunityfinance.org.uk](http://www.northwestcommunityfinance.org.uk)  
Shared interest [www.shared-interest.com](http://www.shared-interest.com)  
Rootstock Ltd [www.rootstock.org.uk](http://www.rootstock.org.uk)  
Suffolk Regeneration Trust [www.suffolkregenerationtrust.org](http://www.suffolkregenerationtrust.org)  
UK Social Investment Forum [www.uksif.com](http://www.uksif.com)  
Wessex Reinvestment Trust Group [www.wessexrt.co.uk](http://www.wessexrt.co.uk)

### MORTGAGES

Norwich and Peterborough Building Society [www.npbs.co.uk](http://www.npbs.co.uk)

### PENSIONS

West Yorkshire Pension Fund [www.wywpf.org.uk](http://www.wywpf.org.uk)

## FOOD & DRINK

'At Sheepdrove Organic Farm, we are driven by a passionate concern for animal welfare, wildlife conservation, a sustainable rural economy and restoring the link between farming and good food.' PETER AND JULIET KINDERSLEY

### FOOD

#### BOX SCHEMES

Soil Association's Why Organic [www.whyorganic.org](http://www.whyorganic.org)

#### COMMUNITY SUPPORTED AGRICULTURE

Cultivating Communities [www.cuco.org.uk](http://www.cuco.org.uk)

#### FARMERS MARKETS

National Association of Farmers Markets [www.farmersmarkets.net](http://www.farmersmarkets.net)

#### MAIL ORDER

**General stockists:** companies whose products include baked goods, dairy, fish, fruit & vegetables and meat

Goodness Direct [www.goodnessdirect.co.uk](http://www.goodnessdirect.co.uk)

Graig Farm [www.graigfarm.co.uk](http://www.graigfarm.co.uk)

Organic Delivery Company [www.organicdelivery.co.uk](http://www.organicdelivery.co.uk)

Organic Farmers Market [www.theorganicfarmersmarket.co.uk](http://www.theorganicfarmersmarket.co.uk)

Real Food Direct [www.realfooddirect.co.uk](http://www.realfooddirect.co.uk)

**Cheese**

Alhamwood Cheese [www.buffalo-cheese.co.uk](http://www.buffalo-cheese.co.uk)

Bath Soft Cheese [www.parkfarm.co.uk](http://www.parkfarm.co.uk)

Caws Cenarth Cheese [www.cawscenarth.co.uk](http://www.cawscenarth.co.uk)

Daylesford Organic [www.daylesfordorganic.com](http://www.daylesfordorganic.com)

Godminster Vintage Cheese [www.godminster.co.uk](http://www.godminster.co.uk)

H.S. Bourne [www.hsbourne.co.uk](http://www.hsbourne.co.uk)

Llanboidy Cheesemakers [www.llanboidycheese.co.uk](http://www.llanboidycheese.co.uk)

Llangloffan Farmhouse

Cheese [www.welshcheese.co.uk](http://www.welshcheese.co.uk)

Loch Arthur Creamery [www.locharthur.org.uk](http://www.locharthur.org.uk)

Staffordshire Organic Cheese [www.deaville.demon.co.uk](http://www.deaville.demon.co.uk)

**Fish**

Craig Farm Organics [www.graigfarm.co.uk](http://www.graigfarm.co.uk)

Martins Seafresh [www.martins-seafresh.co.uk](http://www.martins-seafresh.co.uk)

Organico [www.organico.co.uk](http://www.organico.co.uk)

**Meat**

A.G. Millers [www.agmillers.co.uk](http://www.agmillers.co.uk)

Cambrian Organics [www.cambrianorganics.com](http://www.cambrianorganics.com)

Daylesford Organic [www.daylesfordorganic.com](http://www.daylesfordorganic.com)

Graig Farm Organics [www.graigfarm.co.uk](http://www.graigfarm.co.uk)

Helen Browning [www.helenbrowningorganics.co.uk](http://www.helenbrowningorganics.co.uk)

Higher Hacknell Farm [www.higherhacknell.co.uk](http://www.higherhacknell.co.uk)

Natural Good Food [www.goodfooddelivery.co.uk](http://www.goodfooddelivery.co.uk)

Pure-Iona [www.pure-iona.com](http://www.pure-iona.com)

Save the Bacon [www.savethebacon.com](http://www.savethebacon.com)

Sheepdrove Organic Farm [www.sheepdrove.com](http://www.sheepdrove.com)

Swaddles [www.swaddles.co.uk](http://www.swaddles.co.uk)

The Real Meat Company [www.realmeatco.sageweb.co.uk](http://www.realmeatco.sageweb.co.uk)

Traditional Norfolk Poultry [www.tnpltd.com](http://www.tnpltd.com)

Well Hung Meat [www.wellhungmeat.com](http://www.wellhungmeat.com)

**PRODUCERS**

**Dairy - General**

Daylesford Organic [www.daylesfordorganic.com](http://www.daylesfordorganic.com)

Rachel's Organic Dairy [www.rachelsorganic.co.uk](http://www.rachelsorganic.co.uk)

Baking aids

Beans

Body care

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Cleaning

Dried fruit

Drinks

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-

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## FOOD & DRINK

Yeo Valley [www.yeovalleyorganic.co.uk](http://www.yeovalleyorganic.co.uk)  
**Milk**  
 Classic Organic flavoured  
 milk [www.classic-organic.co.uk](http://www.classic-organic.co.uk)  
 Manor Farm Organic  
 Milk Ltd [www.manor-farm-organic.co.uk](http://www.manor-farm-organic.co.uk)  
**Baking**  
 All Natural Bakery [www.allnaturalbakery.co.uk](http://www.allnaturalbakery.co.uk)

Vinceremos [www.vinceremos.co.uk](http://www.vinceremos.co.uk)  
 Vintage Roots [www.vintageroots.co.uk](http://www.vintageroots.co.uk)  
**TEA**  
 Clipper Teas [www.clipper-teas.com](http://www.clipper-teas.com)  
 Eleven O'Clock Tea [www.rooiboschtea.com](http://www.rooiboschtea.com)  
 E-Teas [www.e-teas.co.uk](http://www.e-teas.co.uk)  
 Hampstead Tea and  
 Coffee Co [www.hampsteadtea.com](http://www.hampsteadtea.com)

### ORGANIC SPIRITS

Juniper green gin. UK5 vodka. Papagayo white and spiced rums.  
 Order direct from: **Vintage Roots/ Vinceremos or call 01483 894650**

Dove's Farm [www.dovesfarm.co.uk](http://www.dovesfarm.co.uk)  
 Village Bakery [www.village-bakery.com](http://www.village-bakery.com)  
**Chocolate**  
 Cocoa Loco [www.cocoaloco.co.uk](http://www.cocoaloco.co.uk)  
 Green and Blacks [www.greenandblacks.com](http://www.greenandblacks.com)  
 Montezumas [www.montezumas.co.uk](http://www.montezumas.co.uk)  
 Plamil Foods [www.plamilfoods.co.uk](http://www.plamilfoods.co.uk)  
 Stamp Collection [www.buxtonfoods.com](http://www.buxtonfoods.com)

### DRINK

#### BEER AND CIDER

Beers in a Box [www.beersinabox.com](http://www.beersinabox.com)  
 Black Isle Organic  
 Beers [www.blackislebrewery.com](http://www.blackislebrewery.com)  
 Broughton Ales [www.broughtonales.co.uk](http://www.broughtonales.co.uk)  
 Dunkerton's Cider  
 and Perry [www.orchard-hive-and-vine.co.uk](http://www.orchard-hive-and-vine.co.uk)  
 Freedom Organic Beer [www.freedombeer.com](http://www.freedombeer.com)  
 Fuller's Vintage Ale [www.fullers-ales.com](http://www.fullers-ales.com)  
 Hambleton Ales [www.hambletonales.co.uk](http://www.hambletonales.co.uk)  
 Houston Brewery [www.houston-brewing.co.uk](http://www.houston-brewing.co.uk)  
 O'Hanlons [www.ohanlons.co.uk](http://www.ohanlons.co.uk)  
 Only Fine Beer [www.onlyfinebeer.co.uk](http://www.onlyfinebeer.co.uk)  
 Organic Brewhouse [www.quaffale.org.uk](http://www.quaffale.org.uk)  
 Pennard Organic  
 Wines & Cider [www.pennardorganicwines.co.uk](http://www.pennardorganicwines.co.uk)  
 Pitfield Beershop [www.pitfieldbeershop.co.uk](http://www.pitfieldbeershop.co.uk)  
 Smiles Brewing Company [www.smiles.co.uk](http://www.smiles.co.uk)  
 Skinner's Brewery [www.skinnerbrewery.com](http://www.skinnerbrewery.com)  
 St. Peter's Brewery [www.stpetersbrewery.co.uk](http://www.stpetersbrewery.co.uk)  
 Valhalla Brewery [www.valhallabrewery.co.uk](http://www.valhallabrewery.co.uk)  
 Weston's Cider [www.westons-cider.co.uk](http://www.westons-cider.co.uk)

#### COFFEE

The Bean Shop [www.thebeanshop.com](http://www.thebeanshop.com)  
 Burgil Coffee [www.burgil.com](http://www.burgil.com)  
 Café Direct [www.cafedirect.co.uk](http://www.cafedirect.co.uk)  
 Coffee Plant [www.coffee.uk.com](http://www.coffee.uk.com)  
 Equal Exchange [www.equalexchange.com](http://www.equalexchange.com)  
 Hampstead Tea and  
 Coffee Co [www.hampsteadtea.com](http://www.hampsteadtea.com)  
 Hehlis Holistics [www.hehlis-holistics.com](http://www.hehlis-holistics.com)  
 Organico [www.organico.co.uk](http://www.organico.co.uk)  
 Origin [www.origincoffee.co.uk](http://www.origincoffee.co.uk)  
 The Tea and Coffee Plant [www.coffee.uk.com](http://www.coffee.uk.com)

#### SPIRITS

Juniper Green Organic  
 Gin [www.junipergreen.org](http://www.junipergreen.org)  
 The Organic Spirits Company [www.uk5.org](http://www.uk5.org)

Hehlis Holistics [www.hehlis-holistics.com](http://www.hehlis-holistics.com)  
 Nothing But Tea [www.nbtea.co.uk](http://www.nbtea.co.uk)  
 Pukka Herbs [www.pukkaherbs.com](http://www.pukkaherbs.com)  
 The Tea and Coffee Plant [www.coffee.uk.com](http://www.coffee.uk.com)  
**WINE**  
 Davenport  
 Vineyards [www.davenportvineyards.co.uk](http://www.davenportvineyards.co.uk)  
 Pennard Organic Wines &  
 Cider [www.pennardorganicwines.co.uk](http://www.pennardorganicwines.co.uk)  
 Sedlescombe Organic  
 Vineyard [www.englishorganicwine.co.uk](http://www.englishorganicwine.co.uk)  
 The Organic Wine  
 Company [www.theorganicwinecompany.com](http://www.theorganicwinecompany.com)  
 Vinceremos [www.vinceremos.co.uk](http://www.vinceremos.co.uk)  
 Vintage Roots [www.vintageroots.co.uk](http://www.vintageroots.co.uk)

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### COFFINS

Nigel's Eco Store [www.theinsightecostore.com](http://www.theinsightecostore.com)  
The Sawd Partnership [www.bamboocoffins.co.uk](http://www.bamboocoffins.co.uk)  
Somerset Willow [www.somersetwillow.co.uk](http://www.somersetwillow.co.uk)

### FLOWERS

Green Fuse [www.greenfuse.co.uk](http://www.greenfuse.co.uk)  
Red Hen [www.redhens.co.uk](http://www.redhens.co.uk)

### FUNERAL SERVICES

Family Care Funeral Services [www.ecofunerals.co.uk](http://www.ecofunerals.co.uk)  
Natural Endings [www.naturalendings.co.uk](http://www.naturalendings.co.uk)

Natural Death Centre [www.naturaldeath.org.uk](http://www.naturaldeath.org.uk)  
Green Undertakings [www.greenundertakings.co.uk](http://www.greenundertakings.co.uk)  
Green Ending [www.greenendings.co.uk](http://www.greenendings.co.uk)  
Olney Green Burial Company [www.thegreenburialcompany.plc.uk](http://www.thegreenburialcompany.plc.uk)  
Peace Funerals [www.peacefunerals.co.uk](http://www.peacefunerals.co.uk)  
Woodland Burials [www.woodlandburials.co.uk](http://www.woodlandburials.co.uk)

### ORGAN DONATIONS

UK Transplants [www.uktransplant.org.uk](http://www.uktransplant.org.uk)

### WILLS

Ethical Wills [www.ethicalwill.com](http://www.ethicalwill.com)

## GARDEN

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Ernest Charles Wildlife Gardening [www.ernest-charles.com](http://www.ernest-charles.com)  
Green Gardener [www.greengardener.co.uk](http://www.greengardener.co.uk)  
The Organic Gardening Catalogue [www.OrganicCatalogue.com](http://www.OrganicCatalogue.com)  
Tamar Organics [www.tamarorganics.co.uk](http://www.tamarorganics.co.uk)

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The Natural Collection [www.naturalcollection.com](http://www.naturalcollection.com)  
The Organic Gardening Catalogue [www.OrganicCatalogue.com](http://www.OrganicCatalogue.com)

### ALLOTMENTS

Allotments UK [www.allotments-uk.com](http://www.allotments-uk.com)  
Allotments Regeneration Initiative [www.farmgarden.org.uk](http://www.farmgarden.org.uk)

### CHARCOAL

Allotment Forestry [www.allotmentforestry.com](http://www.allotmentforestry.com)  
Bioregional [www.bioregional.com](http://www.bioregional.com)  
Heartwoods [www.heartwoods.co.uk](http://www.heartwoods.co.uk)

### COMMUNITY PROJECTS

Federation of City Farms and Community Gardens [www.farmgarden.org.uk](http://www.farmgarden.org.uk)  
Common Ground [www.commonground.org.uk](http://www.commonground.org.uk)  
British Trust for Conservation Volunteers [www.btcv.org](http://www.btcv.org)  
London Biodiversity Partnership [www.lbp.org.uk](http://www.lbp.org.uk)

### COMPOSTING

The Composting

Association Community Composting Network [www.commnitycompost.org](http://www.commnitycompost.org)  
Recycle Works Permaculture [www.recycleworks.co.uk](http://www.recycleworks.co.uk)

Association Organic UK [www.permaculture.org.uk](http://www.permaculture.org.uk)  
Recycle Works... [www.organicgarden.org.uk](http://www.organicgarden.org.uk)  
Blackwall Ltd [www.recycleworks.co.uk](http://www.recycleworks.co.uk)  
Original Organics [www.blackwall-ltd.com](http://www.blackwall-ltd.com)  
The Bin Company [www.originalorganics.co.uk](http://www.originalorganics.co.uk)  
The Worm Hotel [www.thebincompany.com](http://www.thebincompany.com)  
Wiggly Wiggles [www.thewormhotel.com](http://www.thewormhotel.com)  
**FERTILISERS**

EnviroMulch [www.wigglywiggles.co.uk](http://www.wigglywiggles.co.uk)  
Fertile Fibre [www.wbpenviromulch.com](http://www.wbpenviromulch.com)  
Rooster Pelleted Manure [www.fertilefibre.co.uk](http://www.fertilefibre.co.uk)

### FURNITURE & FENCING

Duchy Originals [www.rooster.com](http://www.rooster.com)  
English Hurdle [www.duchyoriginals.com](http://www.duchyoriginals.com)  
Forest Stewardship Council [www.hurdle.co.uk](http://www.hurdle.co.uk)  
[www.fsc-uk.info](http://www.fsc-uk.info)

## GARDEN, HOLIDAYS & HOME

Pendlewood [www.pendlewood.com](http://www.pendlewood.com)  
 Potential [www.potentialonline.co.uk](http://www.potentialonline.co.uk)  
 Wilderess Wood [www.wilderesswood.co.uk](http://www.wilderesswood.co.uk)  
**NURSERIES AND GARDENS**  
 Butterworth's Organic Fruit Nursery  
[www.butterworthsorganicnursery.co.uk](http://www.butterworthsorganicnursery.co.uk)  
 Ryton Organic Gardens [www.hdra.org.uk](http://www.hdra.org.uk)  
 Walcot Organic Nursery  
[www.walcotnursery.co.uk](http://www.walcotnursery.co.uk)  
 Landlife Wildflowers [www.wildflower.org.uk](http://www.wildflower.org.uk)  
 National Wildflower Centre [www.nwc.org.uk](http://www.nwc.org.uk)  
**ORGANISATIONS**  
 Henry Doubleday Research Association  
[www.hdra.org.uk](http://www.hdra.org.uk)  
 Biodynamic Agricultural Association  
[www.biodynamic.org.uk](http://www.biodynamic.org.uk)  
 Permaculture Association  
[www.permaculture.org.uk](http://www.permaculture.org.uk)  
 Soil Association [www.soilassociation.org](http://www.soilassociation.org)  
 Organic UK [www.organicgarden.org.uk](http://www.organicgarden.org.uk)  
 Good Gardeners Association  
[www.goodgardeners.org.uk](http://www.goodgardeners.org.uk)

Centre for Alternative Technology [www.cat.org.uk](http://www.cat.org.uk)  
**PEST CONTROL**  
 Agralan [www.agralan.co.uk](http://www.agralan.co.uk)  
 Defenders [www.defenders.co.uk](http://www.defenders.co.uk)  
 Humane Wildlife Deterrence [www.jbryant.co.uk](http://www.jbryant.co.uk)  
 Permaculture Association  
[www.permaculture.org.uk](http://www.permaculture.org.uk)  
 Scarletts Plant Care [www.scarletts.co.uk](http://www.scarletts.co.uk)  
**SEEDS**  
**Exchange**  
 Flora Locale [www.floralocale.org](http://www.floralocale.org)  
 Henry Doubleday Research Association  
[www.hdra.org.uk](http://www.hdra.org.uk)  
**Suppliers**  
 Association Kokopelli Organic Seeds  
[www.organicseedsonline.com](http://www.organicseedsonline.com)  
 EcoSeeds [www.ecoseeds.co.uk](http://www.ecoseeds.co.uk)  
 Tamar Organics [www.tamarorganics.co.uk](http://www.tamarorganics.co.uk)  
 The Real Seed Catalogue [www.realseeds.co.uk](http://www.realseeds.co.uk)

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 Email: [skippers@sailezra.co.uk](mailto:skippers@sailezra.co.uk) Web: [www.sailezra.co.uk](http://www.sailezra.co.uk)

## HOME

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**GENERAL STOCKISTS:** companies whose products include building materials, flooring, furniture, insulation, paints, water saving devices and windows & doors

Construction Resources [www.constructionresources.com](http://www.constructionresources.com)  
 Earth and Reed [www.earth-and-reed.co.uk](http://www.earth-and-reed.co.uk)  
 Ecomerchant [www.ecomerchant.co.uk](http://www.ecomerchant.co.uk)  
 Green Building Store [www.greenbuildingstore.co.uk](http://www.greenbuildingstore.co.uk)  
 The Green Shop [www.thegreenshop.co.uk](http://www.thegreenshop.co.uk)  
 The Healthy House [www.healthy-house.co.uk](http://www.healthy-house.co.uk)  
**BEDDING AND LINEN**  
 Albatross [www.albatross-global.com](http://www.albatross-global.com)  
 Green Fibres [www.greenfibres.com](http://www.greenfibres.com)  
 Schmidt Natural Clothing [www.naturalclothing.co.uk](http://www.naturalclothing.co.uk)  
**CLEANING PRODUCTS**  
 Aqual Ball [www.21stcenturyhealth.co.uk/aquaball.asp](http://www.21stcenturyhealth.co.uk/aquaball.asp)  
 Bio-D Company Ltd [www.biodegradable.biz](http://www.biodegradable.biz)  
 Ecotopia [www.ecotopia.co.uk](http://www.ecotopia.co.uk)  
 Ecover [www.ecover.com](http://www.ecover.com)  
 Green Fibres [www.greenfibres.com](http://www.greenfibres.com)  
 Greenlands [www.greenlands-env.co.uk](http://www.greenlands-env.co.uk)  
 Natural Eco Trading Ltd [www.greenbrands.co.uk](http://www.greenbrands.co.uk)  
 Vertue [www.vertue.com](http://www.vertue.com)  
 Wonderwash Laundry Ball [www.thehealthyhome.com](http://www.thehealthyhome.com)

**CONSTRUCTION/ RENOVATION**  
 Cob in Cornwall [www.cobincornwall.com](http://www.cobincornwall.com)  
 Concept Timber [www.concept-timber.co.uk](http://www.concept-timber.co.uk)  
 Finch Macintosh Architects [www.finchmacintosh.co.uk](http://www.finchmacintosh.co.uk)  
 Gale and Snowden [www.ecodesign.co.uk](http://www.ecodesign.co.uk)  
 Insideout Buildings [www.iobuild.co.uk](http://www.iobuild.co.uk)  
 Nicholas Hare [www.nicholashare.co.uk](http://www.nicholashare.co.uk)  
 Mike Wye and Associates [www.mikewye.co.uk](http://www.mikewye.co.uk)  
 Quattro Design [www.quattrodesign.co.uk](http://www.quattrodesign.co.uk)  
**ESTATE AGENTS**  
 Green Moves [www.greenmoves.co.uk](http://www.greenmoves.co.uk)

**FURNITURE**  
**New**  
 Arbor Vetum [www.arborvetum.co.uk](http://www.arborvetum.co.uk)  
 Rawnsley Woodland Products [www.cornishwoodland.co.uk](http://www.cornishwoodland.co.uk)  
**Recycled and salvage**  
 African Trackwoods [www.african-trackwoods.co.uk](http://www.african-trackwoods.co.uk)  
 Aschroft Reclaimed Timber Flooring [www.woodflooringuk.com](http://www.woodflooringuk.com)  
 Cox's Architectural

Salvage Drummonds Architectural Antiques [www.drummonds-arch.co.uk](http://www.drummonds-arch.co.uk)  
 Reclaimed Pine Online [www.reclaimed-pine-online.co.uk](http://www.reclaimed-pine-online.co.uk)  
 Reclaimed Timber Specialists [www.reclaimed.uk.com](http://www.reclaimed.uk.com)  
 Reel Furniture [www.reelfurniture.co.uk](http://www.reelfurniture.co.uk)  
 Treesave Reclamation Ltd [www.buresreclamation.co.uk](http://www.buresreclamation.co.uk)  
 Toby's Reclamation [www.tobysreclamation.co.uk](http://www.tobysreclamation.co.uk)  
 Viking Reclamation [www.reclaimed.co.uk](http://www.reclaimed.co.uk)

**PAINTS**  
 Auro Organic Paints [www.auro.co.uk](http://www.auro.co.uk)  
 Earth Born Paints [www.earthbornpaints.co.uk](http://www.earthbornpaints.co.uk)  
 Ecopaints [www.ecopaint.co.uk](http://www.ecopaint.co.uk)  
 Eco Solutions Ltd [www.ecosolutions.co.uk](http://www.ecosolutions.co.uk)  
 Little Greene Paint Company [www.thelittlegreene.com](http://www.thelittlegreene.com)  
 Nutshell Natural Paints [www.nutshellpaints.com](http://www.nutshellpaints.com)  
 The Green Shop [www.greenshop.co.uk](http://www.greenshop.co.uk)

**TILES**  
 Natural Tile [www.naturaltile.co.uk](http://www.naturaltile.co.uk)  
 Siesta Cork Tile Co [www.siestacorktiles.co.uk](http://www.siestacorktiles.co.uk)  
**TIMBER**  
 Altham Hardwood Centre [www.oak-beams.co.uk](http://www.oak-beams.co.uk)  
 Victorian Wood Works [www.victorianwoodworks.co.uk](http://www.victorianwoodworks.co.uk)

**WINDOWS AND DOORS**  
 Drummonds Architectural Antiques [www.drummonds-arch.co.uk](http://www.drummonds-arch.co.uk)  
 Green Building Store [www.greenbuildingstore.co.uk](http://www.greenbuildingstore.co.uk)  
**WOOD FLOORING**  
 Drummonds Architectural Antiques [www.drummonds-arch.co.uk](http://www.drummonds-arch.co.uk)  
 Treework Flooring [www.treeworkflooring.co.uk](http://www.treeworkflooring.co.uk)



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**OFFICE RESOURCES**

**CARTRIDGES**

Action Aid recycling [www.actionaidrecycling.org.uk](http://www.actionaidrecycling.org.uk)

**COFFEE AND TEA AND MILK**

Fair-trade [www.fairtrade.org.uk](http://www.fairtrade.org.uk)

**PAPER**

Evolve [www.evolve-papers.com](http://www.evolve-papers.com)

**STATIONARY**

Ecotopia [www.ecotopia.co.uk](http://www.ecotopia.co.uk)  
Remarkable [www.remarkable.co.uk](http://www.remarkable.co.uk)

**TELEPHONE & INTERNET**

The Phone Co-op [www.thephone.coop](http://www.thephone.coop)

**WATER**

Aquatic [www.aquaiduk.co.uk](http://www.aquaiduk.co.uk)

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Natural Eco Trading Ltd [www.greenbrands.co.uk](http://www.greenbrands.co.uk)  
Organic Equine [www.organic-equine.co.uk](http://www.organic-equine.co.uk)  
Pet Organic [www.petorganic.com](http://www.petorganic.com)  
Veggie Pets [www.veggiepets.com](http://www.veggiepets.com)

### CEMETERIES

Penwith Pet Cemetery [www.petsandpeopletogetherforever.co.uk](http://www.petsandpeopletogetherforever.co.uk)

Tarn Moor Memorial

Woodland [www.tarnmoor.co.uk](http://www.tarnmoor.co.uk)

### FOOD

Burns Pet Nutrition [www.burns-pet-nutrition.co.uk](http://www.burns-pet-nutrition.co.uk)  
Graig Farm [www.graigfarm.co.uk](http://www.graigfarm.co.uk)  
Healthy Paws [www.healthypaws.co.uk](http://www.healthypaws.co.uk)  
Hi Peak Feeds [www.hipeak.co.uk](http://www.hipeak.co.uk)  
Nature Diet [www.naturediet.net](http://www.naturediet.net)  
Organic Feed Company [www.organicfeed.co.uk](http://www.organicfeed.co.uk)  
Pascoes [www.pascoes.co.uk](http://www.pascoes.co.uk)

## RECYCLING

'We remove unwanted furniture – everything from desks to coat-stands – and redistribute it to local start-up businesses. This diverts furniture from landfill and, based in deprived inner cities, we create opportunities for disadvantaged people.' [GREEN-WORKS.CO.UK](http://GREEN-WORKS.CO.UK)

### ORGANISATIONS

Children's Scrapstore [www.childrenscrapstore.co.uk](http://www.childrenscrapstore.co.uk)  
Community Recycling Network [www.crn.org.uk](http://www.crn.org.uk)  
Community Wood Recycling [www.communitywoodrecycling.org.uk](http://www.communitywoodrecycling.org.uk)

Eco-Schools [www.eco-schools.org.uk](http://www.eco-schools.org.uk)  
Ethical Junction [www.ethical-junction.org](http://www.ethical-junction.org)  
Freecycle [www.freecycle.org](http://www.freecycle.org)  
Mail Preference Service [www.mpsonline.org.uk](http://www.mpsonline.org.uk)  
The Local Exchange Trading Scheme (LETS) [www.letslinkuk.org](http://www.letslinkuk.org)

### BATTERIES - REUSABLE

Centre of Alternative Technology [www.cat.org.uk](http://www.cat.org.uk)  
The Green Shop [www.greenshop.co.uk](http://www.greenshop.co.uk)  
Get Ethical [www.getethical.com](http://www.getethical.com)

### BICYCLES

Re-Cycle [www.re-cycle.org](http://www.re-cycle.org)  
The Bike Station [www.thebikestation.org.uk](http://www.thebikestation.org.uk)

### CLOTHING/ TEXTILES

Triad [www.traid.org.uk](http://www.traid.org.uk)

### COMPUTERS/FAX/PHOTOCOPIERS

Office Green [www.officegreen.net](http://www.officegreen.net)  
Computer Aid [www.computeraid.org](http://www.computeraid.org)

### ELECTRONIC & HAZARDOUS WASTE

Envirogreen [www.envirogreen.co.uk](http://www.envirogreen.co.uk)  
Waste Care [www.wastecare.co.uk](http://www.wastecare.co.uk)

### FURNITURE

Emmaus [www.emmaus.org.uk](http://www.emmaus.org.uk)  
Green-Works [www.green-works.co.uk](http://www.green-works.co.uk)

### MOBILE PHONES

Action Aid Recycling [www.actionaidrecycling.org.uk](http://www.actionaidrecycling.org.uk)  
Fonebak [www.fonebak.com](http://www.fonebak.com)  
Collective Good [www.collectivegood.com](http://www.collectivegood.com)

### NAPPIES

The Real Nappy Campaign [www.realnappycampaign.com](http://www.realnappycampaign.com)  
Nappy Line [www.nappyline.org.uk](http://www.nappyline.org.uk)

### OIL

Oil Bank [www.oilbankline.org.uk](http://www.oilbankline.org.uk)  
ReUze [www.reuze.co.uk](http://www.reuze.co.uk)

### PAINT

Community Repair [www.communityrepair.org.uk](http://www.communityrepair.org.uk)

### TYRES

Centre for Alternative Technology [www.cat.org.uk](http://www.cat.org.uk)  
Tyre Disposal [www.tyredisposal.co.uk](http://www.tyredisposal.co.uk)

### PLASTIC CUPS AND BOTTLES

Office Green [www.officegreen.net](http://www.officegreen.net)  
RECOUP [www.recoup.org](http://www.recoup.org)  
Save a Cup [www.save-a-cup.co.uk](http://www.save-a-cup.co.uk)

### REFRIGERATORS

Envirogreen [www.envirogreen.co.uk](http://www.envirogreen.co.uk)

### SPECS AND SUNGLASSES

Vision Aid Overseas [www.vao.org.uk](http://www.vao.org.uk)

### TV MONITORS

Emmaus [www.emmaus.org.uk](http://www.emmaus.org.uk)

### TOOLS

Tools for Self Reliance [www.tfsr.org](http://www.tfsr.org)

### WOOD

Community Wood recycling [www.communitywoodrecycling.org.uk](http://www.communitywoodrecycling.org.uk)

## TRANSPORT, WATER & WEDDINGS

### **TRANSPORT**

#### **BICYCLE CAMPAIGNS**

London Cycling Campaign [www.lcc.org.uk](http://www.lcc.org.uk)  
 Sustrans [www.sustrans.org.uk](http://www.sustrans.org.uk)  
 UK National Cyclists Organisation [www.ctc.org.uk](http://www.ctc.org.uk)

#### **BIO-DIESEL FUEL**

Ebony Solutions [www.ebony-solutions.co.uk](http://www.ebony-solutions.co.uk)

#### **BREAKDOWN**

Environmental Transport Association [www.eta.co.uk](http://www.eta.co.uk)

#### **BUS**

Travel Line [www.traveline.org.uk](http://www.traveline.org.uk)

#### **CAR SHARING/CAR CLUBS**

Lift Share [www.liftshare.org](http://www.liftshare.org)  
 Car Clubs [www.carclubs.org.uk](http://www.carclubs.org.uk)  
 My Street Car [www.mystreetcar.co.uk](http://www.mystreetcar.co.uk)

#### **ELECTRIC SCOOTERS**

Electric Scooters [www.electric-scooters-galore.com](http://www.electric-scooters-galore.com)  
 Extra Energy [www.extraenergy.org](http://www.extraenergy.org)  
 Powabyke [www.powabyke.com](http://www.powabyke.com)

#### **TRAIN**

National Rail Enquiries [www.nationalrail.co.uk](http://www.nationalrail.co.uk)

### **WATER**

Toilet cisterns, the biggest water consumers in the house by far, can use as much as nine litres of clean, drinkable water with every flush. Save at least three litres of water by putting a brick in the cistern.

#### **CONSERVATION**

Celtic Water Management [www.celticwater.co.uk](http://www.celticwater.co.uk)  
 Eco Logic [www.ecologicuk.com](http://www.ecologicuk.com)  
 Conservation Ltd [www.groundworkwales.org.uk/water/tapflow.htm](http://www.groundworkwales.org.uk/water/tapflow.htm)

Flowco Mariflo Ltd [www.groundworkwales.org.uk/water/flowco.htm](http://www.groundworkwales.org.uk/water/flowco.htm)

Hippo the Water Saver [www.hippo-the-watersaver.co.uk](http://www.hippo-the-watersaver.co.uk)  
 Tap Magic [www.tapmagic.co.uk](http://www.tapmagic.co.uk)

#### **PURIFICATION**

Earthly Goods [www.earthlygoodsgroup.co.uk](http://www.earthlygoodsgroup.co.uk)  
 Green-way Services [www.green-way-services.co.uk](http://www.green-way-services.co.uk)

Pure H2O [www.pureh2o.co.uk](http://www.pureh2o.co.uk)  
 Simply Water [www.simplywater.com](http://www.simplywater.com)

#### **RAINWATER HARVESTING**

Centre for Alternative Technology [www.cat.org.uk](http://www.cat.org.uk)  
 Envireau Rainwater Management [www.envireau.co.uk](http://www.envireau.co.uk)

Free Rain [www.freerain.co.uk](http://www.freerain.co.uk)  
 HiTech Energy Ltd [www.hitechenergy.co.uk](http://www.hitechenergy.co.uk)  
 Rainharvesting systems [www.rainharvesting.co.uk](http://www.rainharvesting.co.uk)

#### **TREATMENT**

Living Water [www.livingwater.org.uk](http://www.livingwater.org.uk)  
 Cress Water [www.cresswater.co.uk](http://www.cresswater.co.uk)  
 Aqua Hydrotech Ltd [www.aquahydrotech.com](http://www.aquahydrotech.com)

### **WEDDINGS**

#### **DRESSES**

Wholly Jo's [www.wholly-jo.co.uk](http://www.wholly-jo.co.uk)

#### **HONEYMOONS**

Responsible Travel [www.responsibletravel.com](http://www.responsibletravel.com)

#### **LISTS**

Green Fibres [www.greenfibres.co.uk](http://www.greenfibres.co.uk)

#### **RINGS**

Cred Jewellery [www.cred.tv](http://www.cred.tv)

Ethical Wedding Rings [www.silverchilli.com](http://www.silverchilli.com)

#### **VENUES AND CATERING**

Fallow Fields [www.fallowfields.com](http://www.fallowfields.com)  
 Penrhos Court [www.penrhos.co.uk](http://www.penrhos.co.uk)  
 Montezumas [www.montezumas.co.uk](http://www.montezumas.co.uk)



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## VOLUNTEERS WANTED

**To work as interns at The Ecologist in editorial or marketing. Please email: [Kim@theecologist.org](mailto:Kim@theecologist.org)**

## WHY NOT SAY IT WITH A TREE THIS VALENTINE?



There is no more enduring emblem of affection than an arboreal symbol of love. Contact **Ashridge Tree Gifts** for the perfect suggestion. Trees arrive beautifully packaged within 24 hours and with information on how to nurture the new arrival for a patio or garden. From £25, including delivery, 50p is donated to the Tree Council. **Telephone 01963 359444.** [www.ashridgetreegifts.co.uk](http://www.ashridgetreegifts.co.uk)

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# WE ARE THE MAGIC...

We interrupt our regular broadcasting for a moral advisory from reverend billy...



**W**as it Katrina? Was it Rita? Was it the Bush and Blair war? Was it the extinction spikes that generate fourth quarter profits? It was months and months of what I call TOO MUCH SCIENCE FICTION AT BREAKFAST! And, as always, this violence was again explained by our contrite leaders with liberal applications of the name of Jesus Christ. The self-congratulatory happy amnesia of Christmas was too much this year. Did you have that feeling too? We felt – no, not this year, not now – we can't do this again.

Our 'church' rented two bio-diesel buses and set out across America. 'The Shopocalypse Tour' we called it. We were intent on stopping shoppers in flagrante, in the parking lots of supermalls. Yes, go straight into the shopping frenzy, singing gospel songs with anti-consumerist lyrics like, 'Oh yes it's Christmas, so LET'S STOP OUR SHOPPING! Can't you tell CONSUMER CONFIDENCE IS DROPPING!'

We revved up in New York on Buy Nothing Day, parading down Fifth Avenue and over to Times Square, that great gathering of corporate imagery, the Stonehenge of Logos. Then into the buses with our bags and outlandish hopes and straight across the Hudson, west into America. On the first day we sang 'The Struggle for Forests' in a Post Office in Snowshoe, Pennsylvania and exorcised the Victoria's Secret catalogues.

On the second day we were chased from a Wal-Mart construction site in Ohio, but then as we were leaving our bus was boarded by the mayor of nearby Oberlin, Ohio – and he gave us the keys

to his city! And on the third day, at about 10pm, an 18-wheeler rammed us from behind, sending 13 of us into three local hospitals, with helicopters landing on the highway, gurneys and emergency vehicles everywhere. Highway 80 was stopped for hours, miles of traffic idling in zero degree weather... and local news anchors looking into cameras with tragic seriousness, 'The bus carrying The Stop Shopping Gospel Choir was hit by a semi owned by Transport America...'

Those of us not in hospital gathered around our totalled bus, and waited in an Econo-Lodge at Exit 13, near Bryan, Ohio. An anonymous donor wired us \$50,000. We set out again within 48 hours of the bus-truck collision, and headed for Chicago's 'Magnificent Mile' of famous luxury stores. In a blizzard, we sang, 'We are on a mission to save Christmas from the Shopocalypse!' and felt a lot better. In Jefferson we bestowed sainthood on a local city councilman, David Olsen – an anti-Wal-Mart activist, he lost his position after Wal-Mart financed his opponents. Then we went on up to Minnesota, to the Mall of America.

We dressed one hundred Minneapolis activists in red, white and blue choir robes, and entered the mall singing 'Joy to the World'. We seemed to be a local church hired to sing to the shoppers. Believing this ourselves, we took to the main stage and, on a signal from our director Savitri D, we switched lyrics to, 'Stop Shopping! Stop Shopping! Do you feel the Hell in your shopping list!

Shopocalypse! Shopocalypse!'

Meanwhile, at each new town – Des Moines, Kansas City, Omaha, Dallas – singers would join us, arriving from the Ohio hospitals, limping into our cheering throng. In Bentonville, Arkansas – at Wal-Mart's headquarters – we all wore angelic white. We began in the cemetery behind the building, praying with the dead and asking for their power. In Lubbock, Texas we sang in a big outdoor tent. A tent revival! We were breaking into song in truck stops, holding hands on the mountain tops. In New Mexico and Arizona, we met with so many people, all kinds of people – this is an across

We sang, 'We are on a mission to save Christmas from the Shopocalypse!'

the political spectrum movement. This is a commonsense revolution.

And on Christmas Day 50 of us went to Disneyland, jumped into The Parade of Dreams in front of Mickey and Snow White, and preached and sang 'We are the Magic

Kingdom, we have the magic ourselves, our towns, our communities, our earth is dying, let's take our magic back home!' Didn't Jesus say that?

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## What is ecotricity?

See [encarta.msn.com](http://encarta.msn.com).

e-co-tric-i-ty

noun

ecofriendly electricity: electric energy produced by ecologically friendly means, for example, by solar power or wind power (informal)

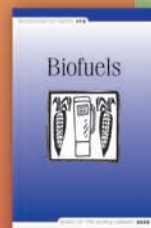
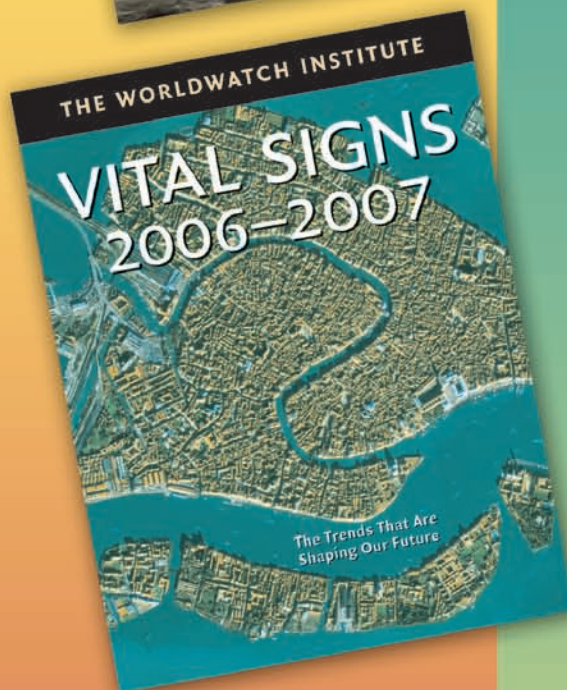
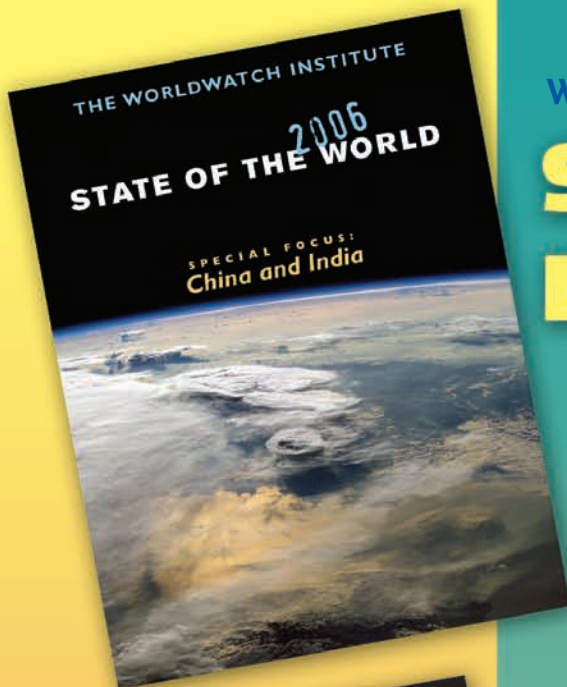
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