ENVIRONMENTAL MAGAZINE OF THE YEAR

ECOLOGIST

JUNE



THE LOST BEES
Where have they all gone?

MORTGAGES
Victims of climate change

DIRTY TRICKS
The Monsanto cover-up

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[1] Based on BWEA and ASA figures of an emissions factor of 860g CO2/kWh for electricity generated by coal fired power stations, typically displaced by wind power generating capacity.

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One day all holidays will be as convenient as this



Photograph JUSTIN CEDERHOLM

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The approach to Princess Juliana International Airport, over Maho Beach, on the tiny island of St Martin. The airport is the busiest international airport in the Caribbean. A Nirvana for plane spotters, but risky for bathers who can experience dangerous jet blast on the beach when a fully laden jet begins its take-off roll.

Editorial
Agents of destruction

It was a classic *Ecologist* story. A multinational company breaking the law, dumping toxic waste onto the land, threatening the ecosystem and the well-being of those living in the area. We welcomed Douglas Gowan and his evidence, welcomed the chance to cross swords with Monsanto again. We welcomed the opportunity to take on a story that many journalists knew but few were prepared to write about, either because it was too depressing or because the story couldn't be told in the paltry number of column inches they were prepared to give it.

Readers, when they see a finished article are generally unaware of the groundwork that goes into a major investigation. They don't hear the often vocal debates around our office lunch table. They are not aware of the head-scratching, nit-picking and late nights trying to take the 'facts' – a writhing bag of snakes – and lay them out in a straight line. It was clear early on that the story of Brofiscin quarry was complex and that there were many perplexing and unanswered questions. But as events unfolded, it became equally clear there was a much darker side to it, involving a government agency whose job should be to protect the public from such catastrophes (see page 12).

The Environment Agency is the leading public body with a mandate to protect and improve the environment in England and Wales. It is the second largest agency of its type in the world and the largest in Europe. At its launch on April 1st 1996, Ed Gallagher, Chief Executive of the Agency at the time, said that the agency would be 'one of the largest and most powerful environmental regulators in the world'.

Eleven years on we've ended up with an agency with no clear purpose and no will to act. An agency that has never brought a prosecution against a major polluter. An agency, it would seem that puts the financial interests of industry ahead of the environment.

This fact has been apparent for many years. Indeed in 2002, a select committee report severely criticised its performance on several counts including the lack of a coherent vision, its failure as a regulator, its low public profile and its lack of accountability.

Last year a similar report noted the agency's difficulties juggling its conflicting roles of industry regulator and environmental champion, and commented that it seemed unprepared to cope effectively with the complex challenges that climate change poses. We agree, but government inquiries into government agencies can only ever achieve so much and are always couched in the language of compromise.

The fiasco at Brofiscin has brought the *Ecologist*'s own view of the Environment Agency sharply into focus. It's not a pretty sight.

Documents obtained by Douglas Gowan under the Freedom of Information Act paint a picture of a disorganised and paranoid organisation more concerned with manipulating the truth than protecting the environment. When a publicly funded agency apparently spends its time tapping phones and intercepting emails, in order to discredit an expert witness who could help prosecute a major polluter, it has ceased to be an effective advocate.

What is needed is an independent inquiry into Brofiscin as well as a full and independent accounting of the agency's performance to date, including how the agency operates, what its goals are, its prosecution record and any conflicts of interest its executives, scientists and investigators may have with industry. It is entirely conceivable that the conclusions of such an inquiry would be that no mere facelift or reorganisation will set things right. Only shutting the Environment Agency down and starting afresh will give us a hope of getting the protection we need at governmental level against those who would place the preservation of a healthy bottom-line over the preservation of the natural world.



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Letters



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BURYING THE TRUTH

I write in response to your article 'Burying the truth' (May 2007), which includes a number of misrepresentations.

In March 2005, the Brofiscin quarry was classified as contaminated land due to pollution of controlled waters and designated a 'special site' under the contaminated land legislation (Part 2A of the EPA 1990). Until that time, Rhondda Cynon Taf County Borough Council was the lead authority for Brofiscin and continues to be responsible for assessing the human health risks associated with the site due to air quality.

Our Brofiscin investigations – in line with our responsibility for the environment – have focussed on assessing the current state of controlled water pollution and its potential to spread. These results are also being used by the council for its ongoing analysis of public health issues. In this instance, the technical and historical information received from Mr Gowan will not significantly improve the report being compiled by Atkins, which focuses on the current state of the site. However, we thank Mr Gowan for all the help he has given and continues to give.

Since being designated a 'special site', the Environment Agency (EA) has led an ongoing investigation to identify the 'appropriate person/s' for remediation liabilities. These investigations are focussed on a number of companies and individuals – not just Monsanto. On expert advice from our US attorneys, the EA has filed a protective reservation of rights in the US Bankruptcy Court to clarify the liability of Solutia Inc and Monsanto for remediation costs with respect to Brofiscin Quarry. This action preserves our rights to proceed against Solutia Inc and/or Monsanto for these costs.

We recently met with Mr Gowan to discuss his concerns. Your article asks serious questions regarding EA propriety in carrying out our statutory duties to protect the environment. We did not release Mr Gowan's testimony to Monsanto or Tony Morgan; neither did we withhold it from the council. We take these accusations very seriously and strongly refute any wrongdoings by our officers in his respect, who have acted professionally at all times.

Our priority since taking the lead on this site in 2005 has always been – and shall remain – to protect the environment for people and wildlife. We are committed to determining the best way forward to protect the local environment and to recover costs from those liable.

Barbara Young, Chief Executive, Environment Agency

The *Ecologist* replies: The issues addressed here are answered in our follow up article; see pages 12-16.

2020 VISION

With increasing questioning of the effectiveness of certain renewables, nuclear, biofuels, etc, to actually reduce CO_2 levels, why has the UK and the EU apparently committed political suicide by legislating for a 20 per cent reduction of CO_2 emissions and 20 per cent increase in renewables, etc, by 2020?

In fact it is the biggest politically engineered coup this century. By selecting 2020, 13 years of high economic activity are allowed (costing one trillion euros) for the procurement, manufacture, construction, commissioning and high-CO_2-emitting part of the lifecycle of these forms of energy.

By 2020, these forms of energy will be in use, producing virtually carbon-free energy and the European Union will have accomplished the 20 per cent reduction promised and will have diversified from fossil fuels.

However, by 2020, atmospheric CO_2 levels will have risen; the CO_2-producing world population and world GDP will have risen by twice the existing total in the whole of the EU; the poor will be starving for lack of crops.

The way forward is to immediately reduce CO_2 and pollution by doing as Stern advises: 'reduce demand' and follow the plentiful advice in *Ecologist* articles. The post of carbon tsar should be created, to remove politics from the equation and to maximise the cost-effectiveness of CO_2 reduction, and engineer ways to mitigate the effects of inevitable global warming.

Peter Field, St Albans

Ecologist poll

Would you like to see fortnightly rubbish collections in your area if they increased the rate of recycling?
See Comment, page 21

62 per cent of you would not welcome personal carbon quotas if all your personal details were kept on file

TIME BANKING

I read with interest Jonathan Rowe's article 'Prozac or park benches' (April 2007) looking at the need for mutual help from neighbours and friends. He mentioned Edgar Cahn and the time dollar movement and states that 'until recently, such efforts could be dismissed as eccentric'. So I am pleased to tell you that time banking is alive and thriving in the UK, where we have 80 time banks throughout the country, set up to draw people together and reward them for being part of vibrant social networks. One of our most successful time banks was set up at a doctor's surgery in London, specifically aimed at tackling mental health issues, where the idea

of reciprocal help and support gave local people a chance to feel part of the community again by becoming active citizens who look out for each other.

Although high-tech communities via the web are growing, there is nothing that can replace the face-to-face interaction of one person helping another and knowing that when the time comes that they too would receive help. As the saying goes, 'one good turn deserves another', and it is not money that makes the world go round, but this.

Martin Simon, Executive Director, Time Banks UK, Gloucester

BIGGER ISN'T BETTER

Jonathan Porritt may have regrets, but he need not worry, there are many in the green community who share his concerns about population (April 2007). Of all the people who have ever lived on this planet, around a third are alive today.

So, scratch the surface of any environmental problem and it's not hard to see that population is a root cause. But, raise the matter in public and you are likely to be accused of being a neo-Malthusian authoritarian oddball, or much worse. And yet, with world population set to increase by 40 per cent by 2050, we cannot ignore the issue and something must be done to encourage a grown-up public debate on the subject.

While politicians remain in denial on the issue and continue to see people as economic units contributing to GDP, it's hard to see how population can be shown to be a legitimate area of concern and the key to unlocking the climate change conundrum. The problem remains that politicians see big populations as an indicator of economic strength, with a seat at the world's top table of nations guaranteed. It's time they recognised that unfettered population growth leads to ecological overdraft that spells bankruptcy and environmental disaster.

Nick Reeves, Executive Director, Chartered Institution of Water and Environmental Management

Daily dilemmas

In each month's issue, we ask a common ethical question that many of us ponder in our day-to-day lives, and people can go to our website and offer their suggestions as to how to answer it. In a subsequent issue we will publish the most practical and engaging selections in the letters pages.

Would you rather rent a house in safe area or own a house on a flood plain?

See **'Safe as houses',** page 47

Go to **www.theecologist.org** to have your say.

ENERGY SOURCE IGNORED

I am concerned that some misconceptions may be leading the government to overlook a source of clean energy with great potential for the UK and the rest of Europe. I refer to concentrating solar power (CSP), the simple but effective technique of using mirrors to concentrate sunlight to create heat, and then using the heat to raise steam to drive turbines and generators, just like a conventional power station. Solar heat may be stored in melted salts so that electricity generation may continue at night and on cloudy days.

CSP works best in hot deserts and, of course, there are not many of these in Europe! But detailed studies by scientists and engineers at the German Aerospace Center have shown that it is feasible and economic to transmit solar electricity throughout Europe from North Africa and the Middle East using highly efficient 'HVDC' transmission lines. The potential is absolutely huge: less than 1 per cent of the world's hot deserts could produce as much electricity as the world currently uses. In the scenario described in the *TRANS-CSP* report from the German team, CSP electricity would be one of several renewable sources of energy and there would be an overall increase in the resilience and security of energy supplies compared with the situation now. There are substantial potential benefits for people in countries of the sun belt, including desalination of sea water using waste heat from CSP plants.

Dr Gerry Wolff, TREC-UK, Anglesey

GOING SMOKE-FREE

I am grateful to Pat Thomas for raising awareness of nicotine replacement therapy (NRT) (Behind the Label, April 2007). She rightly points out that NRT has been shown in studies to help smokers quit and quotes one such study. A recent review of all the large, high-quality studies revealed that NRT can increase the odds of quitting in the long term by one-and-a half to two times. I agree with Pat Thomas that these effects are fairly small and that NRT is not a miracle solution, but this shows how difficult it is for smokers to quit.

Many smokers need multiple attempts before they can finally free themselves from the addiction. She also rightly points out that a few people may suffer minor side effects from using NRT. I would like to emphasise that these side effects are far less serious than those caused by smoking, which causes lung cancer, chronic obstructive lung disease, circulatory problems resulting in heart disease, erectile problems and loss of limbs. There is also strong evidence that second-hand smoke, or passive smoking, is linked with many of these diseases as well.

I am in no way a fan of the Department of Health, but I think it deserves credit for recent decisions to introduce a nationwide smoking ban, and to roll out a nationwide programme to help people stop smoking. Going smoke-free will be a fantastic way to improve the environment for all of us.

Dr Alexander Wilkinson, by email

ERRATUM

In the May edition ('Green lights are the new white', page 70), we published the wrong website for the Ban the Bulb campaign. Readers interested in logging on for more information should go to www.banthebulb.org.

MEDIA

THE TRUE GLOBAL WARMING SWINDLE



Climate change sceptic Dr Friis-Christensen has condemned Durkin's film as 'inaccurate'

EMINENT SCIENTISTS HAVE ADDED THEIR VOICES TO THE STORM OF PROTEST SURROUNDING THE CONTROVERSIAL CHANNEL 4 DOCUMENTARY *THE GREAT GLOBAL WARMING SWINDLE*.

Immediately following the programme's broadcast on March 8, Carl Wunsch, Professor of Physical Oceanography at the Massachussets Institute of Technology and one of the climate scientists featured in the programme, publicly complained that he had been misrepresented through selective editing. 'If I had known the film's title in advance, I would never have agreed to appear in it,' he said.

There followed an embarassing admission by the film's director, Martin Durkin, that a set of data used to compile one of the programme's key temperature graphs only ran to the early 1980s, but had been 'extended' to the year 2000 to support the contention that global temperatures had fallen in recent years.

Then, as the film was readied for release on DVD, 37 scientists wrote an open letter of complaint to Durkin and WAG TV, the production company behind the film.

The letter said: 'We believe that the misrepresentations of facts and views, both of which occur in your programme, are so serious that repeat broadcasts of the programme, without amendment, are not in the public interest.'

Meanwhile, Ofcom, the broadcasting watchdog, had received 246 complaints from the public, and an investigation is ongoing into whether the programme breached the broadcasting code.

Finally, Eigil Friis-Christensen, director of the Danish National Space Centre and an outspoken climate change sceptic, broke ranks to accuse Martin Durkin and the programme makers of 'fabricating data'. Dr Friis-Christensen, whose research has looked at the importance of the sun's activity in climatic changes, described the use of false data as 'misleading and pointless'.

'I think several points were not explained in the way that I, as a scientist, would have explained them ... it is obvious that it's not accurate,' he told *The Guardian*.

HOME ENERGY

POOR LAW

Renewable electricity will be placed beyond the reach of all but the wealthiest of households, according to the head of the Renewable Energy Association, Philip Wolfe.

On April 20 the government suspended all funding from its much-criticised Low Carbon



Buildings Programme, when grants ran out by midday on the first day of allocation.

Faced with a storm of protest the grants were reinstated in May – with huge cuts in their value.

The total grant now available for homeowners wanting to install solar panels has fallen from £12,000 to £2,500. For wind, the grant has halved from £5,000 to £2,500.

Wolfe said that demand had 'collapsed' since the suspension of the grants scheme, and would be unlikely to recover in face of the cuts.

ELECTRO-SMOG

WI-FI FEARS GROW

A professor at Bristol University has called for an inquiry into the dangers of Wi-Fi wireless internet technology.

'The research hasn't been done. Therefore we cannot assume that there are no effects,' Dennis Henshaw, professor of human radiation at Bristol University said. 'I would be in favour of an inquiry. This technology is being wheeled out without any checks and balances.'

Concerns over the health effects of the electromagnetic fields generated by Wi-Fi devices are mounting, with the chairman of the Health Protection Agency, Sir William Stewart, calling for an official investigation and Professor Lawrie Challis, the head of the Government's committee on mobile phone safety, warning children against placing Wi-Fi enabled laptops on their laps.

FOOD ADDITIVES

SWEET NOTHINGS

Supermarket chain Sainsbury is to fulfill its pledge to remove the potentially harmful sweetener aspartame from children's foods and drinks, by replacing it with the equally controversial sweetener sucralose.

Because sucralose is created using sugar as a starting material its manufacturers claim it is safer than other sweeteners.

Exposure to sucralose has been linked in animals to a shrunken thymus and spleen, enlarged liver and kidneys, and reduced growth rate in rats.

GO FIGURE...

80 per cent of government buildings will miss their own targets for sustainability. Our walking pace has increased by **10 per cent** since 1994. **10** of the world's 30 most polluting power plants are in the UK. **1 billion** seeds are now stored at Kew Gardens. The Ministry of Defence recycled only **1.9 per cent** of its waste paper. **66 per cent** of workers feel 'unfulfilled' or 'miserable' at work. **2,500** post offices are to be closed down to make the network 'sustainable'. **75 per cent** of people think that 4x4s should not be driven in urban areas. **£1.25bn** of gadgets given as presents are never used.



GENETIC MODIFICATION

BEE VICTORY

Chemical company BASF has abandoned plans to conduct a trial of GM potatoes in Hull, East Yorkshire. In a statement, the company said that concerns raised by local farmers growing borage crops mean the trial will be suspended this year 'in order to resolve the issues'.

Nearby farmers cultivating borage, a crop grown for its expensive oil, protested after beekeepers refused to bring their hives within 10 miles of the GM potatoes, for fear of honey contmination. Borage crops are dependent upon bees for pollination. This forced a U-turn by the farmer who had planned to conduct the GM trial.

See *Give Bees a Chance,* p30

HEALTH

FAT-AND-THIN DIET

What is both fat and undernourished? The answer; an increasing number of UK citizens, according to the British Association for Parenteral and Enteral Nutrition (APEN).

APEN estimate that the NHS spends more than £7.3 billion each year on treating malnutrition – double the annual obesity bill. Doctors estimate that six per cent of the population could be suffering from malnutrition at any one time.

Consumption of pre-packaged food and not eating enough fresh fruit and veg are to blame.

PHONE MASTS

'UGLY' REASONING

Forget scientific evidence of cancer, leukaemia, headaches or ill-health – an objection to a mobile phone mast on 'aesthetic grounds' or via a planning loophole is more likely to be successful.

Residents in Coleshill, in Warwickshire, recently presented mobile operator O2 with dossiers of scientific evidence showing that startling increases in the rate of cancer – including seven teachers with tumours who worked at a primary school in the shadow of one mast – and children suffering repeated nose bleeds were linked to the proximity of two mobile base stations.

But it was only when local MP Mike O'Brien told O2 that he was not going to 'put the case on medical grounds,' but rather because the mast was 'ugly and needed replacing' and 'the school needed the land', that the operator agreed to take down the mast.

'We wouldn't move a mast because of residents' concerns, unless it was in our interests from a business perspective,' a spokeswoman for O2 told the local paper.

ECOLOGY

HORSE TRIALS

A barren chalk flood plain in Canterbury, Kent, is being brought back to life...by a herd of Polish horses.

The Konik ponies, which have evolved to thrive on marshland, are munching their way through the marsh, encouraging new shoots to grow and enticing wildlife back to land that was quarried bare in the Fifties.

'They are almost like little farmers selecting the plants they want,' said Peter Smith, chief executive of the Wildwood Trust. 'There is harmony between the plants and the animals who have



evolved together over millions of years.'

Koniks are related to the Tarpan pony, which was once common across Britain until hunted to extinction.

NUCLEAR POWER

CANCER CLUSTERS

The death rate from cancer in neighbourhoods close to Hinkley Point nuclear power station in Somerset is as much as 70 per cent higher than other parts of the country, new research has shown.

Forty-one deaths from breast cancer in the Burnham North ward of Burnham-On-Sea were recorded between 1995 and 2005. Under normal conditions, only 24 deaths would have been expected for the ward's population.

Jim Duffy, a spokesman for campaign group 'Stop Hinkley' which commissioned the research, said that the figures 'speak for themselves'.

FAIR SHARES

Tesco shareholder Ben Birnberg has launched a bid to force the company to ensure decent working conditions, wages, and job security for workers in its international supply chain.

Birnberg is hoping to bring about change under Section 376 of the Companies Act. This states that if a shareholder can find 100 other like-minded shareholders whose average holdings have a value of £100 each, then he or she may put a resolution before the company's board of directors.

Tesco have so far refused to allow the resolution, describing it as 'invalid'.

GIRL POWER

Women are our best weapon in the fight against climate change, say the WI and Women's Environmental Network.

Launching the Women's Manifesto on Climate Change , the campaign groups called for women to be involved in more government decision making. They want to see carbon labelling of goods, lower prices for green goods and more government incentives to encourage change.

'Women make most of the consumer decisions that can influence global warming and are eager for support to do more to help reduce carbon emissions,' said the WI.

GREENWASH?

GO PAPERLESS... AND WIN A FREE FLIGHT

Thanks go to Ecologist reader Laura Stevens, who wrote in to tell us which straw broke the camel's back in her decision to switch from nPower to Ecotricity.

An nPower customer, Laura received a letter from the company asking her to make a commitment to the environment by signing up for paperless billing. As an incentive she was told she would be entered into a prize-draw to win vouchers for cheap-flights website lastminute.com.

Needless to say, she has now received her last (paperless) bill.



A Greenpeace protester holds up a cob of GM maize

GM CROPS

Sowing the seeds of renewal

GROWING PUBLIC CONCERN OVER OUR FUTURE FOOD SECURITY IS MOBILISING A CAMPAIGN FOR SUSTAINABLE FARMING

More than 300 farmers, scientists and NGOs from across Europe attended the International Conference on GMO-free regions in April, which saw presentations and workshops encouraging citizens to fight for EU legislation against GM crops and support agricultural biodiversity.

The GMO-free regions initiative was inspired in 2002, when local authorities in Austria, Tuscany and the UK, frustrated by a lack of national action against GMOs, responded to the concerns of their residents by declaring themselves GM-crop free.

The network has since expanded across Europe and now includes some 4,200 municipalities and communities from 236 regions. Although these regions are currently unable to legally enforce their GMO-free status, the volume of grassroots support which they represent is becoming increasingly difficult for the EU to ignore.

This tide of coordinated anti-GM feeling has recently risen against the one commercially licensed form of genetically engineered maize, Mon810. At present GM seeds must be authorised by the EU, after which they may be grown legally anywhere within Europe. National bans on Mon810 have now been supported by two-thirds of all member states, forcing the European Commission to confront the issue.

But some campaigners see a movement that began with one specific objective broadening out into something much wider.

'What we are seeing here is the mobilisation of a campaign which is not simply anti-GM, but pro-sustainable agriculture' said Claire Oxborrow, Food Campaigner at Friends of the Earth.

Robin Maynard of the Soil Association said, 'Food security is a serious issue and one that Europe certainly needs to address, but not through planting GM crops, which the majority of people don't want to eat.'

STATISTICS

0.1 per cent contamination threshold of non-GM crops allowed by EU directive 2001/18

40 per cent increase in number of GMO-free regions declared in the past year

75 per cent of agricultural crop diversity has been lost in the last century

Photograph ©Greenpeace/Gustavo Graf.

HOLIDAYS

HOME FRONT

More and more Germans are shunning the Balearics for Bavaria for their summer holidays in response to a call by Werner Schnappauf, environment minister for the conservative Christian Social party, for Germans to change their lifestyles. 'Learn to value the qualities close to where you live,' he said, echoing Green party pleas for Germans to holiday at home.

The tourist industry is pragmatic about the change. 'In many circles it will no longer be chic in a couple of years to pollute the environment with tons of carbon dioxide while on holiday,' said Martin Buck, director of Berlin's Tourist Board.

WEATHER

LET IT SNOW

Scientists in China claim to have created the world's first artificial snowfall over the Tibetan plateau by spraying silver iodide particles from a plane into clouds.

The experiment, which resukted in a 1cm deep snowfall over the drought-stricken region, relies on the properties of silver iodide to cause water droplets to coalesce and fall, either as rain or snow, from the cloud.

However, several scientists



have acknowledged the toxicity of silver iodide to fish, livestock and humans, and there are concerns over the effect that rain containing the chemical may have on crops and the food chain. In the US, silver iodide is considered a hazardous substance, and a toxic pollutant.

An engineer attached to the Tibet Meteorological Office told the Xinhua News Agency, 'It is possible to change the weather through human efforts.'

China is said to be interested in using the technology to combat the droughts that will be caused by global warming.

IPCC

NUCLEAR FUTURE

Flying in the face of public and economic opinion, the Intergovernmental Panel on Climate Change has given the green light to increased nuclear power in its report on methods for tackling climate change.

The IPCC's Fourth Assesment Report on climate change mitigation identified nuclear power as a 'key mitigation technology which is currently available'. Technologies in this category are seen as methods for tackling climate change which can be deployed before 2030.

This position is at odds with the most recent thinking, such as a new independent report published by Greenpeace, which highlights the economic catastrophe awaiting governments and taxpayers who plump for new nuclear power stations.

Speaking at a recent lecture at the London School of Economics, Jeremy Rifkin, author of the 'The Hydrogen Economy', said that to have a measurable impact on rising CO_2 emissions, the world would need close to 1200 new nuclear power plants, an unfeasible number. To date, there are only some 435 nuclear power stations across the globe.

The IPCC's endorsement comes as uranium prices hit an all time high of £50 per pound. Industry experts anticipate the fuel to hit the £80 per pound mark in 2008, making the price of nuclear energy even less attractive to investors.

GLOBAL TRADE
SUBSIDY SCAM

When does it make sense to transport your cargo from Europe to the UK via America? When you are a biofuels distributor, working the latest subsidy scam.

'Splash and dash', as the process is known, involves transporting your refined oil from Europe to East coast America. Once there, you add a 'splash' of gasoline to your cargo, cash in on a US subsidy known as 'B99', then ship the oil back to Europe, making money in the process, despite doubling your 'food miles'.

Talking of which, Tesco has admitted that it has created an off-shore tax haven in Switzerland, and is shipping DVDs 1,400 miles in order to sell them back to the UK at £1.46 cheaper. Asda and Amazon are known to use the same practice.

MP Jim Dowd said that small shops 'don't stand a chance'.

GREENWASH?
HYBRID DODGE

The wait is over. Car manufacturer Chrysler has announced that it is to launch a hybrid version of its Dodge Durango and Aspen SUVs, which will use electric motors to complement its 5.7 litre, 8 cylinder engine. Fuel efficiency is expected to increase from 15 miles per gallon to 19 miles per gallon.

'We're constantly looking for more applications for fuel-efficient technology,' said Dan Bodene, a product communications representative from DaimlerChrysler.

NOW THAT'S... PROGRESS

1. Drugs company Eli Lilly has received approval for its drug 'Reconcile' – the world's first anti-depressant for dogs. Based on prozac, the drug can help to 'restore the human-pet bond'.

2. A British neuropsychologist, formerly of Sussex University, has developed a formula for the perfectly balanced life. It is (((L+As)/2) 2+((E+N)/2) + 2A + C + B) x (4/(S+1)).

3. Entrepreneurs chasing Richard Branson's $25m climate prize are preparing to dump tonnes of iron filings into the ocean to see whether increased plankton growth might suck in CO_2.

4. Lydd airport in Kent is fighting a local RSPB campaign by selling T-shirts which proclaim the wearer's support for a 100-fold increase in flights from the site.

UNFAIR TRADE
NUT CRACKERS

The world's poorest nation, Guinea-Bissau in West Africa, has been forced by international traders to drop the price of its main export crop, cashew nuts, by 10 pence per kilo.

Faced with barn-fulls of rotting cashews, the Guinea-Bissau government conceded to traders' demands to drop the export price from 35 to 25 pence per kilo. A kilo of cashews bought in the UK would cost up to £10 per kilo – a 5,000 per cent mark-up.

In the 1980s Guinea-Bissau was self-sufficient in food production, but pressure from the IMF to pay



off debts persuaded the country's farmers to grow cash crops such as cashews. Now, the farmers are forced to swap their cashews for rice just to survive.

CORPORATE
COKE'S WATER GRAB

The organisation appointed to investigate Coca Cola's devastating siphoning-off of Indian water supplies is funded by Coca Cola and has voted the company 'one of the most responsible companies in India'.

Campaigners have argued that the choice of TERI by the University of Michigan, which is acting as adjudicator in the inquiry, demonstrates 'a complete disregard for the very real and serious problems being faced by communities in India'.

Coca Cola is responsible for creating severe water shortages across India by constructing its bottling plants in water-scare areas and draining groundwater wells of millions of litres each day. The company has begun selling water back to drought-stricken residents at inflated prices, whilst also polluting remaining supplies.

MIGRATION
FLOOD WARNING

One billion people could have been forced out of their homes by 2050 as a result of the pressures of climate change, a new report by development charity Christian Aid says.

'A world of many more Darfurs is the increasingly likely nightmare scenario,' the report warns. 'The impact of climate change is the great unknown.'



BAG LADY

Modbury, a small town in rural Devonshire, has received pledges of international solidarity after becoming Britain's first community to outlaw plastic shopping bags. The initiative, inspired by wildlife camerawoman Rebecca Hosking, has spread to communities from Mauritius to India and Singapore to Australia



within weeks.

From May 1 all 43 of the town's independent family businesses and shops agreed to stock only re-useable cotton and jute bags or 100 per cent biodegradable cornstarch and recycled paper bags.

While the United Nations Environment Programme has pledged to tackle such pollution, Modbury's action has left them standing.

'Anyone can achieve what we have done here in Modbury,' says Rebecca, 'Once the community realised the scale of this problem it took us less than a month to source a sustainable, fairtrade alternative'.

Silenced witness



Phone tapping, intercepted emails, threats and police investigations. These are just some of the disturbing developments since the publication of last month's *Ecologist* cover story, *Burying the Truth*. In it we told the story of Douglas Gowan - the sole surviving eyewitness prepared to speak out about what is potentially the biggest environmental crime ever to occur in the UK. This month **Jon Hughes** wades back into murky world of Monsanto, Brofiscin Quarry and the Environment Agency and into a story that simply refuses to fade away.

In the years 1967-74 Douglas Gowan was the lead investigator into mysterious animal deaths in the vicinity of Brofiscin and Maendy quarries in South Wales. He traced the cause back to the dumping of uncontained PCB wastes by the Monsanto chemical plant in Newport.

In 1972 Gowan's assiduous work led Monsanto and its waste contractors Purle to accept the environmental implications of its actions and, in the presence of Gowan and government representatives, the drawing up of a legal agreement to remediate. The 1972 agreement was signed – but never implemented. In 2003 the quarry at Brofiscin erupted, disgorging an acrid pall over the area, and discoloured water into the environment for weeks.

Faced with widespread public anxiety the Environment Agency (Wales) appealed for people with knowledge of the quarry to come forward. On being alerted to this in early 2006, Gowan contacted the Agency, armed with contemporaneous reports, expert analysis and evidentiary proofs secured at the time; a sworn affidavit from 1972 as to what he witnessed at the quarry over his six years there, including details of the 1972 remediation agreement, and a current witness statement confirming events.

Between 1973 and 1999 Gowan, a qualified lawyer, accountant and a company director, was resident in Switzerland and America. Rather than be welcomed as the key witness who could help build a strong case against Monsanto, he has been bizarrely treated as a villain of the piece. Following our publication of Gowan's story, the Environment Agency has sought to defend its position (see Letters page) but documents released under the Freedom of Information Act and seen by the *Ecologist* paint a completely different picture to that proposed by the Agency and show the Agency to be, in the language of government, 'not fit for purpose'.

The most telling turn of events since the publication of last month's cover story is that the police have launched an investigation into seemingly covert and invasive activities at the Environment Agency.

The documents released to Gowan by the Agency paint a shameful picture and reveal that:

- From the moment he first responded to the Agency's appeal for witnesses, he has been viewed as 'trouble';
- Some of Gowan's emails have seemingly been illegally intercepted;
- The Agency has sought to question Gowan's reliability when they have had in their possession many documents – including one from Monsanto in 1973 openly discussing how to destroy his credibility by criminal and fraudulent means – that clearly verify his factual account of events;
- The Agency has apparently shared evidential

documents with Monsanto – the party that they should be pursuing; and

• The Agency is seemingly endeavouring to isolate Brofiscin, as a one-off or orphan situation, when it is clear that the dumping of Monsanto PCB wastes also took place in at least 10 landfill sites across Wales and England.

Furthermore, legal documents from the US reveal that, since February of this year, the Agency has had no proper representation in the US bankruptcy court, where the successors to Monsanto (Solutia and 'new' Monsanto) liability will have their chemical waste legacy liability determined. Repeated claims by the Agency that they have protected the UK's rights are groundless, as no hearing has occurred, and no Court order exists.

Taken together the documents, which stand more than one foot tall, paint a picture of the Agency concentrating its time and effort on trying to silence Gowan rather than pursuing Monsanto – the company responsible for dumping PCB wastes into the UK countryside. The Environment Agency and its predecessors have known since 1969 that chlorinated hydrocarbon products pose a persistent and lethal threat to public health and the environment, and that in 1969 Monsanto itself was internally advising its management that landfill was an unacceptable way of disposing of such toxic wastes.

Gowan has been on the receiving end of such official indifference since he first became involved with events in South Wales and in the West of England nearly 40 years ago, when as the NFU's pollution expert he represented the interests of farmers and landowners in the affected areas.

Back then his testing equipment was frequently vandalised and he was assaulted on site; there was an attempt to bribe him and he was badly beaten outside of Dophin Square in London, leaving him with broken ribs; he was accused of falsifying his test results and found guilty of libel until the court recognised that the evidence against him had been falsified; and he was libelled from the safety of the House of Commons. Quite simply every effort was being made to discredit his findings. To some extent this worked; his figures and results – which were analysed by leading labs and corroborated by the world's leading experts – about the lethal levels of PCBs and other very toxic contaminants in the surface water around Brofiscin, and in the groundwater, and which are proven to have been shared with various government departments, and also Monsanto and Redland, have all disappeared from the public record. Subsequent studies in 1973, 1978, 2004 and 2005 have omitted all reference to them.

It is perhaps instructive that at the time these events were unfolding, Monsanto, which was increasingly agitated by his findings, described Gowan as being a 'persistent nuisance'. Over the past year in correspondence, as the released documents show, the Agency has considered Gowan as a 'persistent complainant': much the same language and seemingly the same approach and attitude toward Gowan, as the released documents show.

> 'Documents released show the Agency, in the language of government, to be "not fit for purpose"'

A startling example is seen in an email exchange between Agency solicitor Natasha Lewis and Chris Young of the Water Research Centre (WRc). In these emails, which predate Gowan meeting the Agency with his evidence in early 2006, Gowan is referred to as 'trouble' and Young informs Lewis that he won't release to Gowan the WRc's records of investigations into Brofiscin. Young writes of Gowan as causing 'lots of trouble at the time' and his involvement leading to the Poisonous Wastes Act of 1972 – which we presume to be an erroneous description of the Control of Pollution Act of 1974, which indeed Gowan's investigations and evidence were partially instrumental in bringing about.

That a long-standing empoyee of the WRc, a government contractor, should implicitly see the 1974 Act as troublesome is of concern. It is also of concern that the WRc has an apparent conflict of interest; as among its biggest clients are Monsanto and BP, both of whom dumped into Brofiscin. They also represent the Environment Agency and Defra, and in the past did work for the Welsh Office.

Further documents are equally as startling.

One is an article written in 1973 by Jon Tinker and published in the *New Scientist*. This is riddled with inaccuracies. First, Tinker claims to have met and interviewed Gowan.

Stop press

Solutia Inc presented to the US bankruptcy court on Thursday May 17 a revised Plan of Re-organisation and Disclosure Statement. The key elements of this are that they will pay most creditors 85 cents on the dollar and end the parallel adversary action between themselves and their sister company 'new' Monsanto.

They have also bundled all their subsidiary companies, including Solutia UK, into their list of assets. However, they have listed no environmental liabilities from the UK. If this plan is accepted then Solutia Inc and Monsanto will probably escape their liabilities for Brofiscin and other UK sites where they dumped PCB wastes.

The Equity Committee, which represents the thousands of plaintiffs in the ongoing action, have, however, succeeded in having the adversary hearing about alleged fraud in disclosures over environmental liabilities reinstated for hearing on September 5.

The Environment Agency was still, apparently, not legally represented at the US hearing as no new lawyer has seemingly been admitted to the Court to represent their interests.

The *Ecologist* understands the Equity Committee is disappointed about this as they have referenced the situation in the UK as proof positive of undisclosed potential liabilities and therefore systemic fraud on behalf of Solutia Inc.

Tony Morgan

Since publication of 'Burying the Truth' (May 2007) Tony Morgan has contacted the *Ecologist* to deny emphatically that he was at any time responsible for any threats or intimidation made against Douglas Gowan. The *Ecologist* accepts this and is happy to set the record straight. It apologises to him for any distress or confusion caused.

Gowan strenuously denies this and his passport confirms that at the times Tinker claims the meetings took place in the UK Gowan was either in China, America or mainland Europe. Secondly, it confuses the landfill sites Gowan was investigating, making it in the main a wholly inaccurate and confused account of Gowan's results. Thirdly, it contends that PCBs are water soluble – which in the main they are not.

Not only is this a wholly flawed account of events at the time, but the more disturbing aspect is that an annotated version of this article, in which every disparaging remark about Gowan and his evidence is highlighted, was apparently copied to Monsanto by the Envrionment Agency in June 2006. The question has to be: Why?

Gowan's contemporaneous affidavit and subsequent witness statements also landed on Monsanto's desks. How they were received is not known, although legal documents do reveal that the Agency was in discussion with representatives of Solutia and Monsanto. The first set was also sent to the company's waste disposal contractors; originally IWD until they were bought out by Purle, which became Redland Purle in a merger, and eventually Redland.

A second set was delivered without Gowan's knowledge to Monsanto by Martin Shipton, a Western Mail reporter. Around this time when he was unwittingly being openly talked about with third parties who are liable or potentially liable for remediation at the quarry, Gowan began to be subject to death threats, midnight callers and several attempted break-ins at his home.

When Gowan sought support and protection from the Agency, Lewis made her position toward Gowan clear in an email to colleagues; he is a burden on her time and distracting her from her general duties. She is explicit in telling her colleagues the Agency has no duty of care toward him, or any Environment Agency witness: "It is not the Agency's role to offer any guarantees or 'comfort' to someone who is concerned about their safety," she writes.

Not only does this astonishing behaviour ignore a direct order to secure police protection for Gowan from the Agency's chief executive Sir John Harman, it renders the Environment Agency redundant. For a government body whose raison d'etre is to be a watchdog and enforcement agency to say it has no duty of care towards witnesses leaves its credibility in tatters.

> 'For an enforcement Agency to say it has no duty of care toward witnesses leaves its credibility in tatters'

Consequently, rather than alerting the Chief Constable at Norfolk, on whose patch Gowan lives, a letter vouching for Gowan 'should he get in touch' is inexplicably sent to a sub-station in Great Yarmouth, leaving Gowan exposed to danger. He was then stalked, harassed and had his home invaded.

Yet at the time the Agency had in its possession documents from Monsanto that clearly corroborate Gowan's evidence and their hostility towards him.

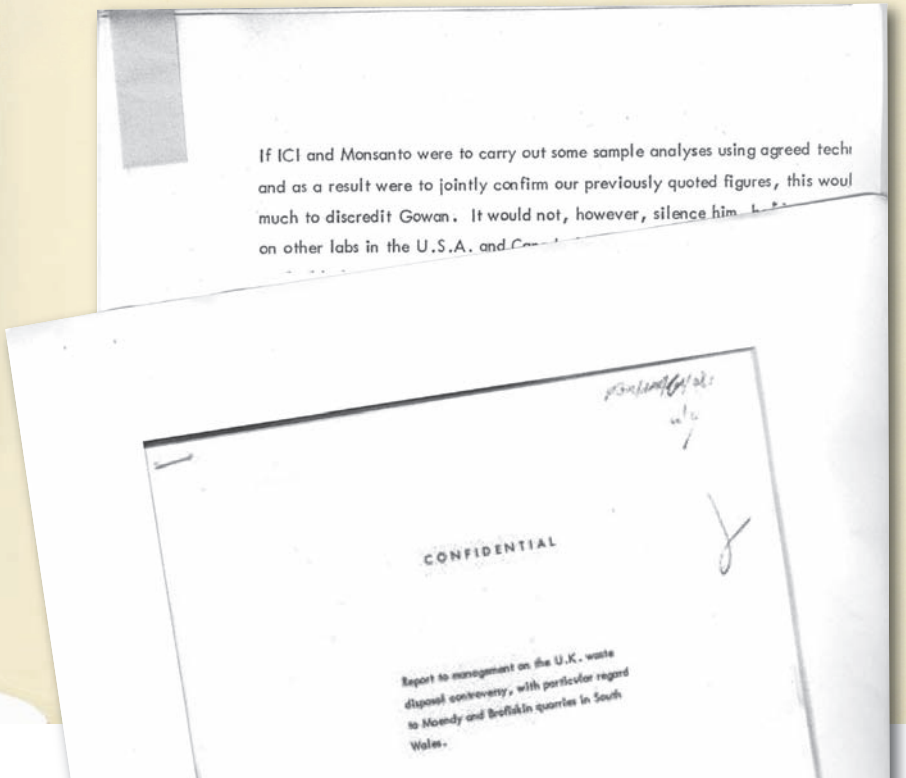
Importantly, Monsanto documents among those released, recognise that Gowan had split his samples with them and the relevant government ministries in the period 1969 to 1973. The Agency has always told Gowan they could find no record of these documents, and that the ICI laboratory studies of the time were lost. These Gowan has now recovered.

Another memo dated June 22 1973, describes a meeting between 15 senior executives from offices in Brussels, London, Newport and Ruabon at Monsanto: the subject; How to discredit Gowan. While much of this document has been redacted it records the following:

"If ICI and Monsanto were to carry out some sample analyses using agreed techniques and as a result were to jointly confirm our previously quoted figures this would do much to discredit Gowan. It would not, however, silence him because he has call on other labs in the US and Canada for his analyses."

Implicit in this statement is a clear consideration of a conspiracy to defraud, and reflects a known strategy pursued by the company. In the US Monsanto habitually used Industrial Bio-Test Lab to test its products. IBTL was shut down in 1978 when exposed for doctoring reports in favour of the chemical industry, and its directors, who included ex Monsanto personnel, were jailed in 1984.

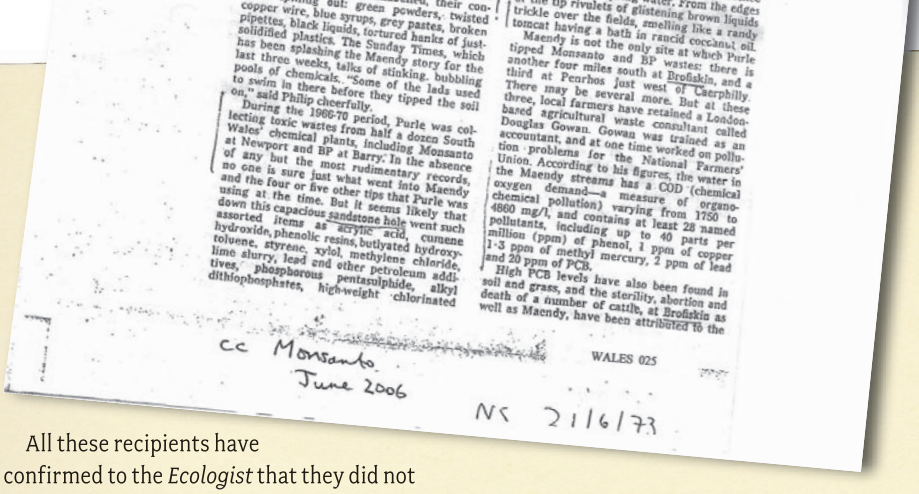
Within the released Agency documents are eight emails, all dated between March 6 and 8 2007, that have seemingly been illegally intercepted. These emails were from Gowan to among others; the Countess Mar, a crossbencher in the House of Lords who has been pursuing the case at Brofiscin; Susan Watts and Paddy French, two national television journalists who have also been following Gowan's case; and GM campaigner Ian Panton.


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and as a result were to jointly confirm our previously quoted figures, this woul
much to discredit Gowan. It would not, however, silence him
on other labs in the U.S.A. and

CONFIDENTIAL

Report to management on the U.K. waste disposal controversy, with particular regard to Maendy and Brofiskin quarries in South Wales.

Documents in the Agency's possession released under Freedom of Information legislation: among them are (left) a five page minute of a meeting between Monsanto executives, detailing strategies to discredit Gowan; and (above, right) Jon Tinker's *New Scientist* article, which was CC-ed to Monsanto


copper wire, blue syrups, grey pastes, broken pipettes, black liquids, tortured hanks of just-solidified plastics. The Sunday Times, which has been splashing the Maendy story for the last three weeks, talks of stinking, bubbling pools of chemicals. "Some of the lads used to swim in there before they tipped the soil on," said Philip cheerfully.

During the 1966-70 period, Purle was collecting toxic wastes from half a dozen South Wales' chemical plants, including Monsanto at Newport and BP at Barry. In the absence of any but the most rudimentary records, no one is sure just what went into Maendy and the four or five other tips that Purle was using at the time. But it seems likely that down this capacious sandstone hole went such assorted items as acrylic acid, cumene hydroxide, phenolic resins, butylated hydroxy-toluene, styrene, xylol, methylene chloride, lime slurry, lead and other petroleum addi-tives, phosphorous pentasulphide, alkyl dithiophosphates, high-weight chlorinated

trickle over the fields, smelling like a randy tomcat having a bath in rancid coconut oil.

Maendy is not the only site at which Purle tipped Monsanto and BP wastes: there is another four miles south at Brofiskin, and a third at Penrhos just west of Caerphilly. There may be several more. But at these three, local farmers have retained a London-based agricultural waste consultant called Douglas Gowan. Gowan was trained as an accountant, and at one time worked on pollu-tion problems for the National Farmers' Union. According to his figures, the water in the Maendy streams has a COD (chemical oxygen demand—a measure of organo-chemical pollution) varying from 1750 to 4860 mg/l, and contains at least 28 named pollutants, including up to 40 parts per million (ppm) of phenol, 1 ppm of copper 1·3 ppm of methyl mercury, 2 ppm of lead and 20 ppm of PCB.

High PCB levels have also been found in soil and grass, and the sterility, abortion and death of a number of cattle, at Brofiskin as well as Maendy, have been attributed to the

cc Monsanto
June 2006

WALES 025

NS 2116/73

All these recipients have confirmed to the *Ecologist* that they did not share the correspondence with the Agency. So how are they in the Agency's possession?

The fact that they are all largely benign and were all sent between March 6th and 8th, suggests that a tap has been put in place. When intercepting emails what is known as a 'dump' is created, ie, all emails sent over a given period are collected in transit and copied to a dump for retrieval.

In the days preceding March 6 a number of peculiar events occurred at Gowan's home, just outside Norwich. Twice an intruder tried to gain entry to his house and his security, phone and internet connections repeatedly crashed.

Yet the content of the emails is so anodyne that one wonders what the Agency made of them. More intriguingly is why they were released; as a warning shot to Gowan that he is being monitored, that they are waiting at the door? In the normal run of things the Agency would have to seek permission to launch a covert operation but none seems evident. As an enforcement agency it would be expected to get permission from the Home Office and use Home Office resources to execute the task. The police have informed Gowan that no such warrant exists.

There are also other documents that discuss what Gowan is going to do next, as if the Agency has knowledge aforethought of his movements and communications.

The lengths gone to silence Gowan are extraordinary and go right to the top. Sir John Harman's PA writes that we should park the whole affair and forget about it; Paul Mee, the health chief at Rhondda Cynon Taf council – which would be the lead plantiff on behalf of the people of South Wales – writes to Graham Hillier, the man in overall charge of the case at the Agency, stating we're not interested in events 40 years ago adding, we should allow Gowan his say and ignore it. Hillier takes the extraordinary step of writing to the press saying Brofiscin is safe.

It's an audacious claim given that the Agency is waiting on a report into Brofiscin by environmental consultants Atkins, who in 2005 wrote of the quarry, 'Pollution of controlled water is occurring... The waste and ground water have recently been shown to contain significant quantities of poisonous, noxious and polluting material... and additional entry (into the environment) will therefore take place.' This is clearly a civil service that has forgotten that its duty is to serve the public not its self interest or that of third parties.

Such public professions have resulted in parliament being repeatedly misled. A raft of questions posed by the Countess Mar have either been met with answers from Lord Jeff Rooker – the man answerable for the Agency at Defra – such as we don't know at this time, or being plain wrong; such as, the contaminated area at Brofiscin is the size of a swimming pool.

Carwyn Jones, the Minister for the Environment at the Welsh Assembly released a statement saying there are no pollution linkages. This is bewildering as Brofiscin is deemed a 'special site' meaning that it is one of the most highly polluted sites in Britain. Both Jones and Dr Kim Howells, a Minister in the present government and the local Pontypridd MP, wrote to Gowan saying they didn't believe him.

> 'It would seem that the Agency has had no effective legal representation in the US since February'

Before receiving these shocking documents, the *Ecologist*'s ongoing investigation into events at Brofiscin forced the Agency to the table and Countess Mar and Gowan met Viscount (Chris) Mills, the head of the Agency in Wales, David Cavell, its legal adviser, and other officers on April 26, 2007.

This promised a breakthrough that sadly never materialised and Gowan only agreed to talk about the meeting after Baroness Young cited it in the Agency's defence in her letter to the *Ecologist*. The meeting in the Apex hotel in Seething Lane, London, lasted for nearly four hours, during which time Gowan, who was for 10 years a trustee or examiner in the US bankruptcy courts, outlined the urgency with which the Agency needed to stake a claim against both Solutia Inc and new Monsanto, and how at this 11th-hour it could possibly be achieved. It was agreed that with his expertise he should draw up a legal memoranda detailing the actions needed to be taken. Gowan did so early the next morning and forwarded it to the Agency. After hearing nothing he then received an email from Cavell bizarrely saying thanks but no thanks, we're going to follow another course of action.

While it's not unusual for lawyers to disagree about a course of action, the Agency's handling of the case has done little to instil confidence in its judgement, or its understanding of events that are unfolding in the US bankruptcy court.

These complex proceedings result from the break-up of Monsanto in 1997; then Monsanto was split into three: Pharmacia, which is now owned by Pfizer; Solutia, which took over the chemical operations; and (to differentiate it from the original) 'new' Monsanto, the GM division. When this spin-off occurred, past liabilities that might materialise were divvied up between the three new entities. While Solutia accepted that it would be responsible for liabilities stemming from its chemical operations these were indemnified by 'new' Monsanto and ultimately Pharmacia, but there have been amendments since that may exclude the UK.

In 2003, Solutia, reeling from liabilities emerging from its past activities – primarily in Anniston, Alabama where its main PCB plant was and where PCB wastes were liberally dumped into the countryside and waterways causing a public health crises – sought voluntary re-organisation in the US bankruptcy courts. If it cannot meet its liabilities – and currently the company has placed before the courts documents showing negative net worth to be $1.4 billion – then new Monsanto will be exposed. A claim from the Environment Agency is not included among Solutia's list of liabilities and UK environmental liabilities are assessed as zero.

What is lodged with the court is an open-ended, non-specific claim from the Agency for a possible liability as yet unknown that has not even had a hearing. Throughout, the document emphasises the Agency's uncertainty as to whether any claim exists, eg, 'the Environment Agency does not know at this time whether it has any claim against Solutia or Monsanto'.

Yet the Agency has Gowan's sworn testimony, witness statements and contemporaneous expert report from the time expressly stating in detail what was dumped, where, and in what quantities (around 80,000 tonnes of PCB contaminated waste materials – a fact admitted to by Monsanto's chief scientist in 1973, Dr William Papageorge), and over what period. Also the agreement that was drawn up between Monsanto, Purle et al in front of Gowan and government authorities for the remediation of the quarry in 1972.

Furthermore there are documents publicly available on the chemical industry archives website, a project of the Environmental Working Group, stating that Monsanto recognise that dumping PCBs in landfill is a dangerous practice and accepting in 1970 that they will be responsible for UK liabilities stemming from the problem created.

Yet inexplicably the Agency still does not know whether it has a claim.

Further undermining the Agency's credibility is a peculiar situation concerning their US counsel, Lovells. Two lawyers from the firm were introduced to the court – in accordance with protocol a lawyer has to be introduced to the court before making representations – as representing the Agency. However, both parted company with their employer in February and no new lawyer has been introduced to the court. Yet the lawyers remain listed with the court as the Agency's representative. When the *Ecologist* emailed the Agency's named representative at Lovells, we got back a proforma email stating they had left the company.

It would seem then that the Agency has had no effective legal representation in the US bankruptcy courts since then and certainly no new lawyer had been admitted to the court and no specific claim has been lodged, at the time of going to press.

Yet the Judge in the case, Prudence Carter Beatty has indicated that she is probably going to respond to requests from the plaintiffs in the case, draw a line under proceedings and re-organise Solutia through the Court, as Solutia has failed to come in with an acceptable Plan. At this point (widely expected to be May 18) all claims are what is known as 'statute barred', and it is increasingly unlikely that any claim will be accepted from the Agency, particularly not one that is so full of doubts.

The implications of this to public health and the public purse are immense.

> 'The Agency's very existence suggests the environment is being protected when it clearly isn't'

PCBs are long living – they never fade away, they simply hang around looking for other PCBs. While not immediately lethal they collect in the environment and enter the food chain and people, where they seek each other out and attack vital organs such as the liver and kidneys and immune system causing conditions such as muscular failure and cancer. As PCBs are bio-cumulative, it could be a generation or two before the full health impacts materialise

As long as they aren't contained at Brofiscin this is the journey that these PCB wastes, dumped 40-odd years ago, are taking on a daily basis. The frightening thing is this situation is not peculiar to Brofiscin, or indeed Maendy, a nearby quarry where Monsanto also dumped wastes.

Other sites across Wales and England accepted these wastes; and many like Brofiscin and Maendy are believed to be on porous rock and were not prepared to accept them, ie, they weren't lined to isolate the wastes, meaning these chemicals simply leach into the environment.

The other sites in Wales are • Penrhos • Ruabon • Newport

And in England • Dalton • Ellesmere Port • Rayleigh • Pitsea • Telford (two sites) • Hereford

To investigate and remediate all these sites would, it has been conservatively estimated, cost somewhere between £500m to £1bn – it has cost £800,000 to date simply to investigate the situation at Brofiscin. Cleanaway are voluntarily remediating Maendy and Ellesmere Port. Penrhos has houses built on top of it. Planning permission is being sought for a residential development adjacent to one of the Telford sites.

If Monsanto aren't made to pay then the taxpayer will have to, as the nature of PCBs in small cumulative doses are being increasingly recognised. The latest research links them to autism. If tort claims – civil actions bought about due to a loss in property value and health related claims – materialise then the true liability could be far more.

Yet the Agency don't want Gowan to share his information with its officers in England who are responsible for those sites; just as they previously wanted to stop him sharing his information with the plaintiffs against Monsanto in the US. Viscount Mills wrote to Gowan in May saying he thought it best kept in house.

In her letter to the *Ecologist* Baroness Barbara Young says the Agency is interested in the quarry as it is now, not events that occurred 40 years ago – which hauntingly echoes Paul Mee's view. If she is not interested in what went into the quarry, and who dumped the materials, and where they came from, how then can she expect accountability?

This shows a frightening lack of understanding of both the law, and the long-lived nature of PCBs. She also defends the behaviour of the Agency's officers. Although, in light of the documents released, serious questions now need to be asked of the Agency, Home Office and Defra about the seeming covert capture of Gowan's emails and misleading of parliament.

For 40 years strenuous efforts have been made to silence Gowan and bury the truth about Brofiscin. Repeatedly, then as now, whenever Gowan has challenged the attacks and smears on him he has been proven right. Twice in recent weeks the Agency have doggedly proffered one version of events before being forced to retract it – a case in point being their dogmatic insistence that only a small portion of the quarry accepted PCB wastes. They now concur with Gowan that around 80,000 tonnes were dumped there, over a 1.26 hectare area.

Whichever way you look at it the Agency has failed in its duty to Gowan, and is failing to protect public health and the public purse. It has failed to meet its stated aim to make the polluter pay. Its failure is all the more shameful as its very existence suggests that the environment is being protected when it clearly isn't.

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- This Sustainable and Responsible Investment fund has outperformed the FTSE All-Share index over 1, 3 and 10 years.*
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- The Fund takes a bottom up, stock picking approach to investment, looking for returns over the long-term - two to four years.
- The Fund Manager George Latham is AA rated by Citywire.

Cumulative Fund Performance as at 31 December 2006*

% Change over	1Yrs	3Yrs	10Yrs
Henderson Global Care Income Fund	+24.1	+67.7	+151.9
Sector Average	+17.9	+64.9	+138.3
Henderson outperformance	**+6.2**	**+2.8**	**+13.6**

Discrete Year Performance (%) as at 31 December 2006*

	Dec 06 Dec 05	Dec 05 Dec 04	Dec 04 Dec 03	Dec 03 Dec 02	Dec 02 Dec 01
Henderson Global Care Income Fund	+14.9	+16.7	+12.8	+17.2	-11.3

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PENSIONS

Mis-selling the Planet

If we want real security in retirement, argues **Nick Robins**, we have to invest in a way that also secures the future of the Earth

One of the favourite slogans of the Blair decade was the appeal to 'joined up' government. Introduced with good intent to stop one part of Whitehall undermining the actions of another, in recent times it has increasingly become a hollow laugh as examples of outright policy conflict between economic and environmental objectives continue to mount.

The City has grown accustomed to ignoring the sermons and following the money, whether for overpriced Private Finance Initiative (PFI) development projects or the next round of airport expansions. But perhaps the most woeful example is the morass that goes by the name of pensions policy. Not only is the current model of pensions provision opaque, fragmented, unjust and unreliable, it also plays a crucial role in deepening the climate crisis.

In theory, one could expect a high degree of crossover between pensions and climate change policies: both, by design, concentrate on providing security in the future. Yet, this potential for positive cross-fertilisation remains a distant hope if the results of the past five years are anything to go by. At a time when concern about climate change has never been greater, the government first launched an independent Pensions Commission and then produced a series of white papers to provide, in Blair's own words last December, 'an affordable and sustainable pensions system for future generations'.

These initiatives have had to deal with pressing and complex issues: an ageing population, burgeoning pensioner poverty, the tragic decline of good occupational schemes and the growing numbers of workers without savings for their retirement.

It is therefore not too surprising that environmental factors were not uppermost in their deliberations. But Blair must have a different definition of 'sustainable' to the rest of us, because there is almost nothing in the white paper, grandly titled Security in Retirement: Towards a New Pensions System, a strategy that considers the environmental implications of the proposed surge in pensions' investment.

A central plank of the new policy is the establishment of a national pension savings scheme through which low-income earners will be automatically enrolled in a system of personal accounts. Each year up to £8 billion in contributions will be made from millions of savers, with employers also chipping in and the state providing tax relief. Most of this will be invested in low-cost, index-tracking funds, although the government has acknowledged the need to make ethical investment options available to participants, but without any evident enthusiasm.

Beyond this, however, government is silent on how these enforced savings of the poorest strata in society will be managed in ways that are compatible with long-term sustainable development.

> Only 12 out of the UK's largest funds bothered to disclose how they took account of social and environmental factors

This myopia has form. Back in 1999, a small revision to the Pensions Act was hailed as a new dawn of responsible investing. All pension funds – amounting to some £1.4 trillion – were required to state whether they included social, ethical and environmental (SEE) factors in their investment policy. Some leading lights took this new measure seriously, particularly the academics' fund, Universities Superannuation Scheme (USS), and the pension scheme of the Environment Agency.

Prodded by its own gadfly campaign organisation, FairPensions, the USS fund has been at the vanguard of efforts to make capital markets consider the long term, whether through the establishment of cutting-edge ventures such as the Institutional Investors Group on Climate Change or the Enhanced Analytics Initiative.

The Environment Agency's fund has also focused on putting its money where its mandate is – for example, investing in sustainable private and public equity funds, with some impressive results in terms of financial returns. On the international scene, as a new report – *Responsible Investment in Focus: How leading public pension funds are meeting the challenge* – by the UK Social Investment Forum and the United Nations Environment Programme Finance Initiative makes clear, these positive steps are part of a broader movement of reform.

Funds including the California state employees' CalPERS (the largest in the United States at $230 billion), the Dutch civil service's ABP ($265 billion) and Norway's massive $500bn oil-financed fund have all started to open their eyes to the impacts of their investments, providing crucial backing for better corporate governance and improved carbon disclosure.

Yet while these efforts are to be applauded, actual compliance with the UK 1999 requirement has been pitiful. According to FairPensions, only 12 out of the UK's 20 largest funds bothered to disclose how they took account of social and environmental factors, putting them in breach of the law. In addition, most of these 20 failed to show how they were tackling the investment risks of climate change. All of this points to a fundamental weakness of the law.

In a classic British piece of reform, funds have a 'duty to consider' the environment, but no 'duty to act' to reduce harm – and certainly no obligation to report on what they are doing. Even among those funds trying to take climate change seriously, the raw truth is that the steps taken to date are unlikely to have led to

significantly less cash being invested in carbon-intensive businesses. Indeed, because these funds don't report the carbon footprint of their holdings, it is difficult for their pension customers – or indeed anyone else – to gauge whether or not they are moving in the right direction.

For funds invested in UK equities, however, some straightforward calculations can be made. Just seven over-sized oil, gas and coal companies – Anglo-American, BHP-Billiton, BP, BG, Rio Tinto, Royal Dutch Shell and Xstrata – contribute nearly 20 per cent of the value of the UK stock market, and account for more than 10 per cent of total global greenhouse gas emissions from their facilities and products. As a result, for every £100 paid into a pension plan invested in UK equities, about £20 will immediately be invested in companies whose core products are exacerbating the climate problem. Unless urgent changes are made, the same fate will befall the proposed system of personal accounts. Essentially, this would amount to an automatic investment in catastrophe.

Providing real security in retirement is one of the principal challenges of a civilised society, and encouraging the population to put more savings away is a good way of contributing to this. But current pension policy has so far failed to consider how underlying investments will need to be fundamentally re-allocated if climatic safety is to be achieved. In the recent debate on the future of pensions, the UK's Social Investment Forum was a lone voice arguing that the new personal accounts scheme needs to have commitment to long-term sustainable development.

Rather than consigning billions to investments that are undermining the future of the very people for whom they are designed to benefit, quantified carbon reduction targets are needed for all pension funds – mirroring those about to be agreed for the nation under the climate bill. Already, concerns have been raised – for example, by the respected think-tank Tomorrow's Company– that the proposed personal account system could open the government to another mis-selling scandal because of the potentially perverse interactions with the benefit system. But the mis-selling risk in terms of the planet could be far, far worse. E

Nick Robins is the author of *The Corporation that Changed the World* (Pluto Press, £15.99)

CASSANDRA

Are you paying attention?

Do you read the business section of your broadsheet? My cat, Ezra, tends to sit on my copy while I digest the political news or have a go at the crossword. Most people don't, and no doubt investor-types do; but perhaps we should take more notice of what is going on.



Almost every day there is news of some merger of one far-too-large company with another. It might be high-street chains, or airlines, banks oil companies, or whatever, but we are in the midst of a fever of acquisitions, takeovers and buyouts.

> The ensuing economic implosion will make the political scene more like a Mad Hatter's tea party than ever

Economics is a curious profession in that it has failed to solve a single one of its major problems. It has yet to ascertain what economics is even for, so it should occasion no surprise that not a single member of it has yet seen fit to alert us to where this ever-accelerating process is likely to lead.

At some stage, since we live in a finite world of finite resources, since every boardroom on the planet is possessed by its own innate drive to expand and since no sort of control, either physical, social or moral, is being exercised, one fine day this growing bubble of expansion will go pop.

It is not difficult to see that the ensuing economic implosion will beggar millions, cause bankruptcies and job losses and make the political scene more like a Mad Hatter's tea party than ever, and accomplish degrees of social discontent that will make the rise of fascism in Nazi Germany look like a bank holiday excursion.

We can either copy Ezra by curling up on this boardroom anarchy and going to sleep on it, or we can perhaps do something about it. This, of course, raises the million-dollar question: do what? You may be disposed to write to your local elected wonder who is on the payroll of Westminster. But if I were you I would not bother. They are the boys and girls who have done so much to create this mess.

On another tack, taking on board that the value of paper money may well come to rival that of single sheets of those bathroom rolls in daily use, it might be a good idea to ascertain the possibilities of creating a local currency, as they are already doing in southern Germany because of their distrust of the euro. And, not least, because the implosion will destroy the value of pensions, why not include the creation of local pension trusts and funds in the agenda of that yet-to-be-called conference?

Then there are contingent considerations: what sort of law and order will it be possible to maintain when our neighbours may be unemployed and perhaps starving? What sort of disease pandemics can we expect?

Well, it all points to a need to prepare for trouble by looking to our local scene and its potentials for food, fuel, energy, health promotion and defence; that is, after grasping that big government won't deliver.

If the rebuilding of local power of government is a big part of the answer, it is doubtless because the destruction of local power was a major cause of the prevailing crisis. Why did we ever let it happen? Was it perhaps because so many of us have copied Ezra and curled up to go to sleep on it all?

In his 85 years Cassandra has been an orphan, runaway, Communist, cook, beggar, editor, presidential advisor, prisoner and priest. E



If I...

...was in charge of Community Regeneration

says **Nick Hurd MP**, I'd let local people spend taxpayers' money, not central government

If I was in charge of community regeneration, my first meeting with Sir Humphrey [Appleby, of *Yes, Prime Minister*] would take place on a train to Carlisle. On the journey, I would ask him to repeat after me: 'We do regeneration with people, not to people'.

In Carlisle we would head for the Raffles Estate, which used to be infamous, but for all the wrong reasons. I would take him to the Living Well Trust, a cheerful community centre in the heart of the estate and introduce him to its founders, Barry Thomas and Kath Queen.

He would learn about two responses to community regeneration. He would see the 'it's about buildings' approach of government, whose imagination was limited to knocking down 500 homes and spreading the bad apples across the city. The second is the 'it's about people' approach adopted by the Living Well Trust, who have restored a sense of community from the bottom up. They do it by offering a caring place for people to come and access advice on virtually anything. Among the laughs, some very serious work is being done to get what they call 'the walking wounded' back on track. It is an inspirational place and we should want every community in need of regeneration to have one.

On the train back, Sir Humphrey and I would discuss the 'How?'. This cannot be about a top-down national action plan. It has to be about finding and supporting more people like Barry and Kath. What they need is access to risk capital and a confidence that the state will buy services off them if they add enough value. When it comes to money, we are happy to spend £500 million of taxpayers' money a year giving advice to businesses in the pursuit of financial capital. Why are we not prepared to invest in those entrepreneurs who want to help us build the social capital that has been so badly depleted?

When the civil servants start spluttering about tight budgets I will ask how much of the total regeneration budget goes to local authorities and how much is spent on administration. You learn in the House of Commons never to ask a question to which you don't know the answer. We spend £9 billion a year on regeneration, of which only 9 per cent goes directly to local authorities – the elected representatives of the community. The ministerial eyes will glint as he hears that we spend an astonishing and unacceptable £500 million on the administration of our national regeneration programmes. This flow of money is all wrong and needs to be redirected where it can be brought to bear more effectively – when it comes to planning the future of our communities, local people know best.

> We spend an astonishing and unacceptable £500 million on the administration of our national regeneration programmes

Of course, the challenge of community regeneration extends far wider than the inner cities. Across the country, people are expressing real passion and concern about what appears to be remorseless community decline in Britain and what that means for quality of life. The decline is driven by the loss of key local services – often the hubs of the community. The statistics are stark. In the past decade we have lost a fifth of our post office network; a quarter of our bank branch network and more than 30,000 independent community retailers – the people who can often brighten our day.

We now talk of 'Clone Town Britain', with every high street looking the same, and ring roads clogged with traffic heading towards the out-of-town warehouses. We know that there is a powerful market trend at work and to varying degrees most of us are complicit in it through our own shopping habits. However, we are waking up to the social cost that is attached. First, there is the cost to our quality of life, which is felt particularly by elderly people, who tend to be less mobile and rely more heavily on local services. Second, there is a cost to our local economy as the loss of community retailers means there is less money circulating around local producers. Third, there is the cost to the environment, because we are increasing our dependence on the car when the climate change agenda tells us that we should be reducing it.

What can we do about it?

As a Conservative politician who is sceptical about the effectiveness of the state, I am quite clear that if we really care about our high streets, the most effective thing we can do is shop in them. If we care about local producers, then more of us should show it through our wallets. However, I am persuaded that the scale of the social problem is such that there is a role for government, not least in giving local communities more ammunition to help level the playing field.

So I would introduce a new law that did two things. First of all, it would require the government to propose a long-term, national action plan to improve the sustainability of communities. Because I have limited faith in

Borders, Cages and Walls

Homero Aridjis

We pin dates to shadows,
wire-in the present.
Shut a body into a schedule,
into brick birdcages.
We put shoes on the imagination,
shirt and pants on the open air.
We narrow the outlook,
haul in the passions with our nets.
Manacle the hands,
and blinker the eyes,
shrink the sunbeams down to size.
Life keeps its distance,
love holds its tongue,
and poetry comes up where it can.

From *Eyes To See Otherwise*, New Directions Publishing Corporation, £11

the ability of central government to get this right, I would insist on this being a process that had the full engagement of local communities. The law would not say what had to be in the plan, but I would expect local authorities to suggest innovative recommendations on what needs to be changed. However, a national action plan is not enough. We have to give local communities real power to influence their future and that means power over money. My law would turn power over money on its head.

It would require central government to make public what it spends in every local authority. In doing this it would have to define what was local spending rather than national. To give an idea of scale, there is close to £9 billion of taxpayers' money being spent in Kent each year, of which only £2.5 billion is under local control. The rest is controlled centrally and effectively invisible to the public – until now.

Throwing a spotlight on the money is not enough. My law would give local authorities the right to argue for reallocation of the money if they felt that government spending did not reflect local priorities. Every pound of central government spending would come under local scrutiny and be judged against local need. The presumption would be in favour of the local authority recommendation unless good reason could be found to reject it. Gradually word would get out that it was worth getting involved in the debate because you could actually make a difference. A greater sense of community would be built as people recognised their power and the chance to shape a better future. They might even start wanting more power once they got a taste for it.

It sounds like a pipe dream but in fact this bill exists. I am the proud sponsor of the Sustainable Communities Bill as it passes through Parliament as a private member's bill. Any proposal that unites groups as diverse as the National Federation of Women's Institutes and the Campaign for Protection of Real Ale must be worth considering, and the bill enjoys strong cross-party support in the House of Commons. Recognising the strength of popular feeling, the government has placed on public record its desire to work with us to put an improved bill on the statute book. It will be a test of whether government really is prepared to do regeneration with people, not to people. E

Nick Hurd is MP for Ruislip-Northwood. Follow the fortunes of the Sustainable Communities Bill at www.nickhurd.com or www.localworks.org

LOCAL GOVERNMENT

Bin and gone

It was to be the deciding issue of the May elections. Honestly, why are we so bothered about bins, asks **Mark Anslow**?

Did you send off for your *Daily Mail* 'THIS BIN NEEDS EMPTYING EVERY WEEK' glossy sticker set for your car and bin? I did. I'm hoping that within a few decades I can make a quick buck selling them on eBay to historians attempting to piece together a picture of democracy in Britain at the beginning of the 21st century.

Let's remind ourselves of how we arrived at such an extremity as a sticker set:

April 24: The *Daily Mail* launches 'The Great Bin Revolt' after learning that 144 local councils operate fortnightly collections. The paper proclaims that 'rubbish collection is the only visible local service many taxpayers receive'.

April 25: The *Mail* names a dozen councils that have 'backtracked' on fortnightly collections following 'popular rebellions'. 'The real vermin are in the town hall,' writes Alison Pearson. Max Hastings declares that the issue must be fought 'tooth and nail'.

April 27: The *Guardian* pipes up that the government should tackle the issue of where the waste comes from.

April 28: The Local Government Association hits back with a study showing that when waste is collected on alternate weeks, recycling rates 'rocket' by 30 per cent.

April 28, additional: The GMB, Britain's General Union, reports that refuse lorry drivers have been dragged from their cabs and beaten by irate householders.

April 29: The *Daily Express*'s Kate Garraway demands to know why we are being left to stew in our own filth, and retorts that you need a degree in chemical engineering to work out what can or cannot be recycled. The *Express* prophesies that rubbish collections will be a key issue when voters go to the polls.

April 29, additional: *The Independent* proclaims that many council leaders could lose their jobs over the issue.

April 30 (three days before election): A more staid exchange takes place in the letters pages of *The Times*. T Wills from Paignton advances that 'if the complainants are having to store excessive amounts of rotting food, then they are throwing away food they did not need in the first place'. J Gozzard from Painswick proposes that if a lack of landfill sites is causing a problem, perhaps the solution is 'a small hill over a waterproof membrane... covered with earth'.

May 1 (election in two days): Ken Livingstone wades into the mix by condemning fortnightly collections as 'cost-cutting measures' with no real environmental benefit.

May 2 (election a day away): Prime Minister Tony Blair stands on a soapbox in Labour Party headquarters: 'I think it is perfectly understandable why councils want to do it, because of recycling and everything [sic], but there may be better ways of doing it.'

May 3 (election day): The central issue of the May elections turns out to be the annulment of thousands of Scottish votes because of confusion over whether to put a tick, cross or number in the box.

May 4 (election plus one day): The *Daily Mail* stops offering car and bin stickers.

What this episode reveals is not a portent of new rat-borne plagues, nor a rising rebellion against environmentalism, nor an assault upon the pressure-washed driveways of middle England. Instead it poses a question: why does the alteration of rubbish collection schedules lead to swathes of the population feeling as though they have been suddenly and brutally disenfranchised?

> Why do fortnightly rubbish collections lead to swathes of the population feeling brutally disenfranchised?

If we let the opportunities for real local democracy – such as those offered by the Sustainable Communities Bill – pass us by, are we destined to become an electorate for whom a weekly rubbish collection really is the lion's share of our civic involvement? E



NUCLEAR ENERGY

An atom of truth?

As the government again seeks support for its nuclear-centred energy review, **Dr David Lowry** asks who's going to pay?

In his valedictory speech to the Labour conference on 26 September last year, Tony Blair commented: 'Ten years ago, energy wasn't on the agenda. The environment an also-ran... ten years ago I parked the issue of nuclear power. Today, I believe without it, we are going to face an energy crisis and we can't let that happen.' What he neglected to mention was who was going to pay.

It is the predilection for omitting such inconvenient truths that recently got the government into such hot water in the High Court over Greenpeace's challenge to the 2006 Energy Review. According to Blair's ministers, no subsidies are being sought by private companies keen to build new nuclear plants. All they want, goes the ministerial mantra, is some reform of the planning system, in order to refine (i.e. shorten) planning inquiries. This reform is already underway.

As the then energy minister Malcolm Wicks told MP Helen Goodman – a contributing author, with eight other Labour MPs, of a SERA energy pamphlet, *What's in the Mix?* – on July 24 last year, in a written reply: 'The government concluded that new nuclear power stations could make a significant contribution to meeting our energy policy goals. It will be for the power sector to initiate, fund, construct and operate new power generation and to meet all associated costs.' Believe that, and you'll also believe in Santa and the tooth fairy.

Gifts to the nuclear industry come in many guises, via government subsidies to help cover the cost of insurance, regulation and research and development, without which the private sector wouldn't invest in nuclear power.

The situation regarding insurance clearly illustrates the point. At present, nuclear plant operators have limited liability in the case of an accident – under international agreements, any claim over £700 million falls on the taxpayer. No investor could realistically take on board the full insurance liabilities, which in the case of Chernobyl have run to several tens of billions of pounds.

This sets the tone for the industry's relationship with government, relying on it as a quasi-*pro bono* consultancy. While regulation might sound like a public service, ensuring safety requirements, regulators are inherently there to advise the industry on everything from the efficacy of design to health and safety of personnel. Any new wave of building would require major government investment in regulatory authorities (such as the Health and Safety Executive and Environment Agency), to attract the necessary numbers and expertise.

In a similar vein, the putative private sector keeps abreast of international developments through government membership of three nuclear clubs – the EU nuclear agency, Euratom, the United Nations' International Atomic Energy Agency (IAEA) and Generation IV International Forum (GIF) on advanced reactor designs. Between 1997 and 2006, the government authorised £102 million to be donated annually to the IAEA alone, according to a written answer by the energy minister on 4 July last year.

Wicks declined to provide a similar figure for UK donations to Euratom, because it 'is paid through the UK's general contribution to the European Commission's budget [and the Euratom] share of the UK contribution could be calculated only at disproportionate cost'. The DTI has allocated £10 million – £5 million in 2006/07 and £5 million in 2007/08 – to support UK involvement in international research under the aegis of GIF, with Generation IV systems set for potential international deployment from around 2030.

Clearly, then, the taxpayer is paying for nuclear power even before a plan has been drawn or a brick has been laid; and the grateful nuclear industry laps it up. But all this support pales into insignificance when the issue of nuclear waste is addressed – or, as has systematically been the case, not addressed.

When trade and industry secretary Alistair Darling unveiled the Energy Review to MPs in Parliament on July 11, he told them, 'It will be for the private sector to initiate, fund, construct and operate new nuclear plants and cover the cost of decommissioning,' adding the elliptical phrase 'and their full share of long-term waste management costs'.

Darling's assertion was challenged by several MPs. Liberal Democrat environment spokesman Ed Davey asked: 'Is he prepared to guarantee, for the entire life of the nuclear plants, that there will be no hidden subsidy, no super-long unfair price contract, no cap liabilities, no government support for nuclear waste decommissioning, no assistance with waste disposal and no stealth nuclear tax for consumers? If business does not build nuclear plants as he proposes, what happens to his policy?' And Labour backbencher David Chaytor, a member of the Environmental Audit Committee, pointedly asked: 'Will he clarify, however, the point in his statement that nuclear generators will be required to pay their full share of long-term waste management costs? Does that mean 100 per cent of waste management costs, and how can we guarantee that, as we do not yet know what the waste management costs will be?' Darling replied: 'The statement does mean that they are expected to meet the full share of those costs, which I would have thought was self-evident.'

It wasn't to Scottish Nationalist MP Mike Weir, who asked again: 'Will the Secretary of State give a clear, unequivocal answer to this question? Does a full share of the long-term waste cost mean 100 per cent – yes or no?' Darling meekly replied: 'I have nothing to add to what I have already said.'

Prospective nuclear investors from the private sector have yet to elaborate how they will pay for the full cost of management (or eventual 'disposal') of the new radioactive waste produced – including the eventual decommissioning of defunct reactors and associated infrastructures – in any atomic renaissance. The one public sector operator presently involved is British Energy, whose legacy of radioactive waste has been bailed out by hundreds of millions of pounds of taxpayers' money, buttressed by a European Commission decision to waive opposition to such state aid from other power-sector operators, who point to the unfair advantage given to the nuclear sector, tipping the level playing field in nuclear's direction.

The projected budget – funded mainly by the taxpayer – for the clean-up of the

radioactive detritus that is the long-lived legacy of nuclear operations since the 1950s is some £75 billion and rising, as provided for by the 2004 Energy Act, which created the Nuclear Decommissioning Authority. An outstanding question remains: will the new agency be given responsibility for delivering the proposals put forward by the Committee on Radioactive Waste Management last July, for the long-term management of radioactive waste? Will it be able to recover costs from any company that puts forward proposals to build and operate a new nuclear power plant?

As Friends of the Earth's director, Tony Juniper, said at the time of the unveiling of the Energy Review: 'The disastrous economics of the nuclear industry means that UK taxpayers are already committed to paying tens of billions of pounds to clean up the mess created by half a century of nuclear power. Without massive public subsidies it is very doubtful that private sector companies will take the huge financial risks of building new nuclear reactors. To this extent it looks like the government is opening the door for new state handouts for nuclear.'

A hint of what is most likely to come can be seen most clearly in the United States, the supposed champion of the free market economy. The authoritative US business weekly *Forbes* reported on May 25 2006: 'Nuclear is not profitable without a raft of government subsidies.'

The article explains how the US government extended insurance coverage to the public in case of a reactor accident at any new plant for 20 years, provided generous federal loan guarantees for up to 80 per cent of the project's cost and would take on the cost of any delay in plant construction related to litigation or government red tape – a huge prize for plant sponsors and investors. Says *Forbes*: 'These new subsidies were lavished on top of old ones, including the biggest one of all: the government's shouldering the problem of nuclear waste. It is little wonder that nuclear is getting a second look.'

Whether you look across the Atlantic or closer to home, the reality remains: if Britain is to get new nuclear power, it's the taxpayer who's going to pay for it. E

Dr David Lowry is an environmental policy research consultant and contributing author to *Nuclear or Not? Does Nuclear Power Have a Place in a Sustainable Energy Future?* (Palgrave Macmillan, £50).

ETHICAL CONSUMERISM

Animal Lifestyles



Ethical consumerism is often fraught with contradictions and downright ridiculousness. Take the notion of animal welfare, sometimes referred to as animal rights. The term has always suggested to me a political struggle for animals' suffrage. Racehorses throwing themselves in front of human athletes? As any meat-eating ethical shopper will know, the animals that enjoy the best welfare are not protected endangered species, nor are they our pets. No, the animals we care for the most are the ones we are about to eat.

I came across a website that advertised organically reared turkeys whose 'lifestyle' you could monitor on a webcam. In the world of ethical shopping, animals now have lifestyles. I had always considered the idea of a lifestyle to be choice, an option, or something to aspire to, a level of decadence, even. I had never considered the turkey to be a particularly aspirational bird, although they do strut a bit.

To protect the lifestyles of the animals we are going to eat, there is even legislation in place. EU regulations state that any animal on its way to a slaughterhouse must travel in stress-free conditions and then be stunned before death. I'm not a vegetarian but I am starting to see their ethical argument. My question is, if we are going to kill them and eat them, isn't it hypocritical to worry about their lifestyle? It may well be that stress-free animals taste better. But isn't there a subconscious guilt on the part of many meat-eaters about the killing of other living beings for food. And doesn't the belief that they lived out their final days in happy, comfortable surroundings alleviate that guilt. I think what would make me feel better is if I knew that the meat I ate came from an animal that didn't enjoy the luxury of a lifestyle, but lived in rather squalid conditions and that by me eating it I was actually saving it from a miserable existence. Instead of a lifestyle label, I think I would rather see a suicide note. In fact, I want my turkey to walk into my kitchen and place its own neck on the chopping block. It would give a whole new meaning to the term oven-ready.

When it comes to egg-laying hens, however, the whole lifestyle concept gets a bit out of hand. While in a supermarket the other day, buying eggs, I noticed that all boxes of free-range eggs carry information about the living conditions of the hens that laid the eggs. The most extreme example claimed (and I'm quoting from the label): 'The hens that laid these eggs were free to forage on organic green pastures. Enjoying privacy, seclusion and freedom of expression.' Freedom of expression?! As I stood reading that particular lifestyle label I happened to glance over at the checkout staff. It occurred to me that even they didn't enjoy the same working conditions and lifestyle as the hens.

Still, all of this may seem quite modest now that Marks & Spencer has entered the ethical food chain. I can hear the voiceover now: 'This is not just ethical food, it's Marks & Spencer's ethical food.' In the scramble for ethical brownie points, the hens that lay their eggs will have enjoyed two weekends a year at a cottage in Tuscany, had their nests feng shuied for their spiritual wellbeing and their eggs gently removed by Caesarean section because they were too posh to push. E

> It occurred to me that even the check-out staff didn't enjoy the same working conditions and lifestyle as the hens

Jeff Innocent is a stand-up comedian.

BEHIND THE LABEL:
Pantene Pro-V Style

In an attempt to stave off that bad hair day, you could end up with a bad health day. **Pat Thomas** reports



Farah brought us the flick. Jennifer gave us the 'Rachel'. Madonna made 'blonde ambition' a desirable thing – at least for a while. And Britney? Well, she got fed up and shaved all hers off.

For women, in particular, nothing seems to evoke as much emotion, aspiration and daily frustration as the search for the perfect hairstyle. We'll do anything to avoid the ultimate social horror of a bad hair day and some of us truly believe that our hair plays a large part in defining who we are. Astonishing, then, that there has been almost no in-depth study of our relationship with our hair. Unless it starts to fall out. Or grow in places where it shouldn't.

In the days before hairsprays and other styling goo, we relied on basic, often short cuts and, when all else failed, wigs. Today we can cover our hair in plastic and glue and force it to take almost any impossible, hard-to-maintain, 'don't touch me, you'll mess up my hair' shape we can dream of. And yet we are not as loyal to our styling products as manufacturers would have us believe. Unlike cosmetics (see last month's Behind The Label), when times get tough, hair-styling products are invariably the ones that get left off the shopping list.

Nevertheless, around 31 per cent of us regularly use styling products almost every day and in the UK we spent around £220 million on them in 2006. Globally we spent around £4.5 billion on hair-styling products. Procter and Gamble, which owns the Pantene brand, has the largest share (22 per cent) of this market, followed closely by L'Oréal.

Women make up the majority of users, but men's products – which are just women's products in more masculine packaging – are becoming increasingly popular.

In the 1980s, styling foams replaced styling lotions. The switch offered several advantages, including the fact that the foams did not drip and were easy to portion out and distribute throughout the hair.

Most styling mousses are made from a combination of water, film-forming resins, surfactants and a propellant system. Apart from providing a bit of hold to our style, mousse products traditionally have a strong element of conditioning associated with them, along with other properties such as easy wet

YOU ARE INDIVIDUAL – NOT!

Industry studies show that women want products that they believe target their individual hair types. Thus, in most styling ranges you have products for curly or frizzy hair, for limp or thin hair and those that produce a perfect straight finish. Manufacturers will stop at nothing to convince the widest possible range of women to buy their products. When researching this styling product we had a range of Pantene Pro-V mousses to choose from, including Ice Shine, Moving Volume, Perfect Curls and Smooth and Sleek types. The names and claims on front of the can suggest that each provides a unique function for hair and each has its own unique holding strength. But when we compared the ingredients labels, guess what? Each product in the range has exactly the same ingredients in exactly the same order as all the others. Even given minute variations in the mix, this merits a 'buyer beware' and reminder to always pay attention to the small print.

INGREDIENTS

Water, Isobutene, Polyquaternium-4, Propane, Propylene glycol, DMDM Hydantoin, Butane, C9-C11 pareth-8, Disodium EDTA, Parfum, Panthenyl ethyl ether, Panthenol citric acid, Benzyl salicylate, Butylphenyl methylpropional, Hexyl cinnamal, Hydroxyisohexyl 3-cyclohexane carboxaldehyde, Limonene, Alpha-isomethyl ionone, Citronellol, Linalool

WHAT THEY GLOSS OVER

Polyquaternium-4
Fixative, film former, conditioner, volumising agent
Can cause contact skin irritation with prolonged exposure.

Propylene glycol
Solvent, humectant; derived from petroleum
Can cause skin irritation, contact dermatitis. Penetration enhancer (alters skin structure, allowing other chemicals to penetrate deeper into the skin and bloodstream).

DMDM Hydantoin
Preservative
Skin irritant. Formaldehyde-releasing agent, thus potential carcinogen.

C9-11 pareth 8
Surfactant, plasticiser, emulsifier
An ethoxylated alcohol that can cause skin dryness, eye irritation. Penetration enhancer; can be contaminated with 1,4 dioxane, a carcinogen that has been linked to breast cancer.

Disodium EDTA
Preservative, antioxidant
Irritating to eyes and skin. Penetration enhancer. Alters skin structure, allowing other active ingredients but also more harmful chemicals to penetrate deeper into the skin, eventually the bloodstream.

Parfum
Fragrance compound
'Parfum' is a collective name given to hundreds of different chemicals used to produce a fragrance in cosmetics and toiletries. Most are neurotoxic and many are persistent (that is, they don't break down in the environment and they accumulate in human tissue and breastmilk). Allergenic; can trigger asthmatic reactions; skin irritation; central nervous system disruption (for example, headache, mood swings, depression, forgetfulness). Common fragrance chemicals like artificial musks and phthalates are hormone-disrupting.

Isobutane, Propane, Butane
Propellants
Can cause headache, breathing difficulties, nausea, vomiting, dizziness, mood swings. Symptoms of mild frostbite (numbness, prickling and itching under the arm) are also possible. Exposure to high doses can cause convulsions and coma. Contribute to the formation of ground level ozone, or smog, which can cause serious breathing problems.

Butylphenyl methylpropional
Synthetic fragrance
Skin irritant; use restricted due to powerful sensitisation potential; in animals, skin applications at high concentrations caused sperm damage and CNS effects.

Hydroxyisohexyl 3-cyclohexane carboxaldehyde
Synthetic fragrance
A contact allergen and sensitiser; worsens eczema in two to three per cent of sufferers.

Limonene
Synthetic fragrance
Skin and eye irritant; powerful sensitiser. May trigger asthma attacks. Laboratory studies suggest that it can produce tumours, reproductive abnormalities and delayed growth in some animals. Common pesticide in flea-control products; toxic to animals.

Linalool
Synthetic fragrance
Skin, eye and respiratory irritant. In animals, causes central nervous system disorders affecting muscle control. Common pesticide in flea control products; toxic to animals.

Alpha-isomethyl ionone
Synthetic fragrance
Skin sensitisation; central nervous system disruption.

Citronellol
Synthetic fragrance
Severe skin irritant. Causes central nervous system disruption. Also used in pesticide products.

combing, good holding power, better volume, shine and a smooth, silky feel to touch.

But the 'conditioning' provided by your mousse is an artifice – the resins and plastics in them may make your hair feel smoother in the short term but they do nothing to actually improve the actual condition of your hair. In fact, the more you use them, the more these ingredients can build up on your hair, decreasing its volume and making it dull and unattractive. And adding 'nutrients' such as panthenol or various vitamins are unlikley to remedy this.

Hair mousse also has certain things in it that the styling lotions of old didn't. Atmosphere-damaging propellants are the first thing that comes to mind. Isobutane, propane and butane may not destroy the earth's ozone shield, but they do contribute to the formation of ground level ozone, or smog, which can cause or exacerbate serious respiratory problems.

Because they are based on water, they also contain a range of skin irritating preservatives. To keep it all mixed together, industrial strength solvent like propylene glycol – and yes, it really is used in anti-freeze.

Perhaps the most remarkable thing about this product is the fact that 9 of the 21 listed ingredients are fragrances – central nervous system toxins and respiratory and skin irritants that have nothing to do with holding or conditioning your hair. Some even double as pesticide ingredients.

Apart from not using styling products, there are really very few alternatives to things like mousses (and gels and hairsprays). In the end, the healthiest alternative might be to stop buying hair-styling products and use the money you save on a really good haircut (and as many women know, a trip to a really great hairdresser is like visiting a lover and a priest at the same time).

With a really good, professional haircut, you should not need to apply lots of glue to your hair to keep it the way you want it. Do this and you may find that you and your hair live happily ever after.

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EC0507



Not in my backyard

Irish farmer Willie Corduff tells **Mark Anslow** how he brought Shell Oil down a peg or two

In early August 2000, there was a knock at the door of Willie Corduff's cattle farm in Rossport, County Mayo, Ireland. On the step was a smartly dressed representative from Enterprise Oil.

'You know why I'm here, Willie?' the man asked with a smile.

'Well, not really, no,' replied Corduff, trying to remember if he had received a letter, a call, or a note to expect such a visit.

'Well you've heard about the gas?' the rep continued. 'I'm here to show you where we're going to be digging the trial holes for the pipeline on your land. To see whether the ground'll be suitable.'

Biting his tongue, Corduff was led out to a boggy patch of ground on his 20-acre farm.

'Here's where we'll be digging the first hole,' pointed the oil man. 'We'll be using a JCB – do you know what a JCB is?' he asked.

Corduff, a farmer with 30 years' experience of such machinery, stood silent while the rep outlined to him the anatomy of a JCB digger.

'And you're sure that won't leave any mark on my land?' asked Corduff.

'Oh no,' grinned the rep. 'It's on big caterpillar tracks. It won't leave a mark.'

'You're right,' said Corduff, 'it won't leave a mark. It won't leave a mark because it's not going in there. It's not going anywhere near my farm.'

The rep was taken aback.

'Would you do me a favour, now?' Corduff asked.

'What's that?'

'Would you get lost!' the farmer spat.

Since that day in the summer of 2000, Willie Corduff and his local community have fought tooth and nail to stop Shell Oil – which bought Enterprise in 2002 – ploughing an ultra-high-pressure gas pipeline through their farms to a refinery that threatens to cause massive water and air pollution at nearby Erris. In the seven years between that first visit and today, Corduff has been bullied, intimidated, summonsed to court, tried and sent to prison for three months. There have been allegations of phone tapping, cars are frequently stopped and searched, the unwitting assistance of the Catholic Church sought, and false evidence presented to courts.

Throughout this, Shell has continued to plough ahead with plans for a pipeline that will siphon off the rich fruits of West Ireland's Corrib gas field into the pockets of private shareholders and investors. The local community will see neither the gas, nor the money.

What they will see is a pipe installed under their farms, in boggy ground prone to movement, through which untreated gas will flow at an unprecedented pressure of 345 bar (five times greater than almost any other land-based pipeline), carrying with it the cocktail of acidic and radioactive gases that flow from deep sea gas fields. Untreated gas is almost always cleaned, purified and given its characteristic odour offshore, because of the danger it poses in a raw form. In the case of the Corrib field, Shell have chosen to bring it ashore first, and then clean it. It works out cheaper.

It was a plan that many older members of the community had failed to grasp. What they saw was Shell's finely glossed PR assault. When the first Corrib rig opened, Shell brought in a



On Willie Corduff's farm in Mayo, the land speaks out a silent protest that is also a demand

Catholic priest to bless it. Shell spoke of 'parishes', and even employed Gaelic-speaking representatives. In meetings, the company carefully avoided the probing questions of Willie and his neighbours. It profiled the village and the local community, played the residents off against each other and used the agreement of one neighbour to coerce another. When 'consultations' were held, Shell staggered the arrivals of residents, so that it could deal with landowners separately and feed them what they wanted to hear. It was a slick operation, which Willie and his neighbours saw straight through.

In April of 2005, representatives from the oil company returned to Corduff's land. Through collusion with the Irish Marine Minister, who was desperate that the deal should go ahead, Shell had won an injunction against the protestors, allowing it to force its way onto private land to begin construction of the pipeline.

This time, Shell's contractors arrived in force, with a police detail behind them. Willie demanded that they show him paperwork that allowed them access to his land. They refused. 'We don't have to show you anything,' the farmer was told. 'We have an injunction now, so you can't touch us.'

The engineers set about pegging the route of the new pipeline through Willie's fields, driving in markers to show where the trench for the pipe would be dug. Willie walked along behind the men. Each peg they hammered into his soil, the burly farmer bent down and pulled up. Exasperated, Shell's workers called the police over and Willie was served with an injunction for trying to protect his own land. A date for his appearance in court was set.

On 29 June 2005, Corduff and four of his neighbours who had taken a stand against Shell stood before a judge in the Irish High Court, in Dublin. 'I was never in a courthouse in my life until Shell brought me there,' Corduff says. 'We knew nothing about the law. We never interfered with the law. We always respected the law up to that point. The only reason we objected to this is because we had to. We had no choice.'

Expecting justice, or at least a chance to argue their case, the men who were to become known as the Rossport Five stood in the dock. Their wives and friends had made a four-and-a-half-hour bus journey from Rossport to support them. But the men quickly realised that the odds were stacked against them.

In amongst the judge's papers was a sworn affidavit made by one of Shell's contractors. It stated that he had been physically assaulted by Willie Corduff while trying to peg out the pipeline. The judge, Mr Justice Finnegan, took this seriously.

'I never touched the man,' Corduff explains. 'But when we put in our counter-claim, the judge simply said, 'We'll move on – it's not relevant.' The employee who had sworn the affidavit had signed his name, and taken a holiday. He was last known to be working for Shell in Russia. His testimony, however, had a damning effect. When the gavel fell, the men were little prepared for the judgment.

'The judge leaned over and asked Micheál Ó Seighin if he had a family home,' Corduff remembers. 'Micheál said "yes". The judge asked him if he had a family car. Micheál said he had. "Well," said the judge, "I'll take that all off ye – I'll fine ye hundreds of thousands of euros, and I'll find a way that you'll pay it. And I'll jail every farmer in Mayo if I have to"'.

Stunned by the judge's attack, the men could only stare as an indefinite prison term was read out.

In the space of days, Willie Corduff went from being a small-scale farmer and father of six in one of Ireland's most remote villages, to an inmate of Cloverhill Remand Prison in Dublin, with no knowledge of when he would be released. 'I used to lie awake at night and think, "Why am I here?"', Corduff says. 'We were in there with guys who had killed people, and we had done nothing.'

The pressure on the men began to grow. It was made clear to them that a judge could be called at any time of the day or night with the documents necessary for them to purge their

contempt, let Shell onto their land, and walk free. In much the same way that 17th-century interrogators waved confession letters in front of tortured traitors, urging them to sign, it was a temptation that the men struggled with themselves to resist. It was only the fear of what awaited them in the form of the pipeline if they did break under the pressure that kept the men from signing: 'We figured, if we come out, we're destroyed anyway. Shell will trample on us. We'd have to leave the place we've lived all our lives,' says Corduff.

But the toll on Corduff was matched by the burden that fell on his wife, Mary. 'When Willie had a phone call, he was only allowed six minutes,' she recalls. 'Now, imagine trying to divide that six minutes between me and the four children who were at home with me. It was just unbelievable. You tried to just spurt out everything you could ...'

'And then you'd break down,' Willie interjects, 'when you heard the kids talking to you. You'd become choked up and couldn't answer them.'

As harrowing as prison was for the family, it worked to strengthen them as the months wore on. From his first day in Cloverhill, Corduff was deluged with a flood of postcards and letters from well-wishers across the world who had followed the Rossport Five story in the media. Fellow inmates began to take an interest, too.

'The lads in the prison would come up to us and say, "What are ye in for?" And we'd say,

'When the first Corrib rig opened, Shell brought in a Catholic priest to bless it'



"Nothing – just protecting our homes and our community." And they'd look at us as if to say, "Look, we may be prisoners but we're not stupid – did you hit 'em? Did you beat 'em? Did you kill 'em?" And we'd say, "No, we did nothing." They'd go away and mull it over and then come back and probe some more – "Is the land yours?", they'd ask, "Does your house belong to you?"'.

Eventually, the prisoners came to trust the unlikely new inmates. Seeing the worldwide media coverage on television elevated the Rossport Five to the status of heroes within Cloverhill. The inmates even offered to stage a sit-down protest for the men – refusing to move either in or out of their cells – but Corduff declined. The men's opposition to Shell would continue as it had begun, peacefully.

On 30 September 2005, some 94 days after the men were first incarcerated at Cloverhill, James Brendan Philbin, Philip and Vincent McGrath, Micheál Ó Seighin and Willie Corduff walked free again. Thousands of supporters rallied in Parnell Square in Dublin to hear the men speak. Within hours, Shell had issued an apology.

It left a bitter taste in Mary Corduff's mouth: 'Shell took away three months of our marriage. We'd been married 27 years and never separated in all that time. Shell took away three months of our first grandchild's life – he was three months old when Willie was sent to jail – you can't make up for the pace a child grows at that age. He was our first grandchild. Shell took that from us. How did they think we could forget about it and accept an apology?'

On 18 April 2007, an Irish court vindicated the Rossport Five for challenging the pipeline, and ruled that Shell must drop all Compulsory Acquisition Orders on residents' land, abandon the original pipeline route, and pay court costs of €1 million.

It is a great symbolic victory for Corduff and his fellow villagers from Rossport, but Mary Corduff is guarded in her praise for the ruling. Asking Shell to pay a fine, she says, 'is like asking us to go and pick up a few grains of sand from the shore near our farm – to Shell, a fine is nothing.'

Shell is now investigating a new route for the pipeline, away from the Corduffs' farm but right through the middle of an estuary that is home to shellfish and salmon, as well as a playground for dolphins and seals. For Corduff and his supporters, the fight must go wearily on.

Today, Willie Corduff is something of a celebrity. Not only is he the subject of a book, he has just been awarded the Goldman Environmental Prize – one of the most prestigious environmental accolades, devised to recognise activists who continue to fight against all odds. Has it changed him? Corduff is, as ever, humble and pragmatic: 'We're simple rural people,' he urges, 'and we've had seven years of hell. If you told me today that getting this prize wouldn't help the campaign, I'd be straight back on the first plane to Mayo. The best prize anyone could offer me would be if I could go home and find that Shell had gone, and left us in peace to get on with our lives.' E

Shell to Sea campaign

'Shell to Sea' is an international non-violent campaign that calls for the gas from the Corrib field to be cleaned and refined offshore, away from the homes and population of North Mayo, and piped inland at a safe pressure.

The campaign estimates that this would add an extra €360 million to the cost of Shell's project – a sum that the company claims is unacceptable, but which in reality is less than a week's profit to the oil giant.

'Shell to Sea' also campaigns to reclaim Ireland's share of the gas. Ireland's rights to all its offshore gas were signed away in the 1960s for a paltry £500 to Texas-based Marathon Oil. Today, all profit from the Corrib gas field will be shared between Marathon, Shell and Norwegian Statoil, a partially State-owned petrochemicals company – which will mean that Norwegian citizens see more benefit from the gas than Irish communities.

The citizens of Rossport, despite the decision to pump some five trillion cubic feet of gas beneath their streets, will have to buy gas at the market rate.

To support the Shell to Sea campaign, see www.shelltosea.com, or phone John Monaghan on +353 097 88806.



Give bees a chance

Recent reports of catastrophic declines in bee populations have had scientists buzzing around looking for a plausible explanation. Is it mites? Is it GM crops? Is it mobile phones or habitat loss? It's all of these things, says **Pat Thomas**, but it's also so much more than that



Forget everything you thought you knew about the sedate and rarefied world of beekeeping. Bees are big business. In 2006, a Cornell University study found that in the USA, bees annually pollinate more than $14 billion worth of seed and crops – mostly fruits, vegetables and nuts. In the UK they are responsible for the pollination of around £200 million worth of food crops.

Bees' role in the natural order of our world is crucial and their importance as pollinators, both for agriculture and for wild plants, can't be underestimated. Nor can it simply be quantified in monetary terms. Bees are what is known as a keystone species, ensuring the continued reproduction and survival not only of plants but other organisms that depend on those plants for survival. Once a keystone species disappears, other species begin to disappear too – thus Albert Einstein's apocalyptic and, these days, oft-quoted view: 'If the bee disappeared off the surface of the globe, then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man.'

This vision may be coming true. Our bees are dying. In record numbers. The recent disappearance of catastrophic numbers of bees from their colonies, in the USA especially but also in Europe, has been dubbed Colony Collapse Disorder (CCD). The most striking symptom of CCD is that the bees appear to die away from the hive. One day they fly away and never return. Those few that are left behind, say scientists, are very ill indeed. Virtually every known bee virus can be found in their bodies; some are carrying five or six viruses, as well as several fungal infections, at the same time.

The other worrying factor is the way that other bees and insects avoid these abandoned nests. In nature, nothing is wasted and an abandoned hive would normally be taken over by other creatures opportunistically looking for food and shelter. But hives suffering CCD remain empty, suggesting that there may be something toxic in the colony itself.

At one time, a 10 per cent loss over a season was considered normal; when parasitic mites became a common problem that number rose to around 30 per cent. With CCD, average colony losses have been reported at around 70 to 80 per cent.

Huge numbers of theories abound as to why the bees are dying, but so far no single one explains why, or provides a clue about how to remedy the situation.

Perhaps our search for the cause is too narrow, however. If we want to understand why our bees are dying off, then a useful first step would be to examine the myriad ways we have exploited them and corrupted their natural behaviour for our own convenience...

Mobile colonies

As the number of crops we grow increases, the need for pollinators grows too, and these days beekeepers can

‘Bees are **sensitive,** social creatures. They are **intelligent,** they **learn** and they **remember.** They also **suffer** from occupational **diseases** just like we do.’





'Bees are a **keystone** species, ensuring the continued **reproduction** and **survival** not only of plants, but of **other organisms** that depend on them'

make more money renting out bees to pollinate food crops than they ever could selling home-made honey.

Migratory pollination is a multi-billion-dollar industry. But transporting bees huge distances in giant 18-wheel juggernauts with the hives stacked on top of each other, also stresses the insects out. Higher levels of stress in turn make them more vulnerable to disease. Studies show that CCD is most prevalent in transported bees, with losses of up to 90 per cent of the colony.

By transporting bees across great distances, beekeepers are also transporting mites and any other parasites, viruses, bacteria and fungi, to places it might not otherwise have spread to.

Overcrowding

Industrial-size colonies may have a bigger market value but they also bring the same problems to bees that industrial poultry farmers have visited on their chickens and turkeys: the easy spread of disease.

In March of this year, a survey of Ohio beekeepers found that the average loss of live colonies in the previous six months was 72 per cent. A close look at the figures, however, revealed that beekeepers with fewer than 100 colonies had an average 55 per cent loss, but the loss rose to 75 per cent for those with 500 or more colonies.

In addition, the boxy structure of modern commercial hives, which makes it easier to squeeze several colonies into a small space, and the configuration of bee yards, have largely been designed for the convenience of human beekeepers and not necessarily with the health and natural biology of the bees in mind.

Unnatural diets

The natural diet of a bee is pollen and honey – a mixture rich in enzymes, antioxidants and other health-supporting nutrients. But to beef their bees up for the heavy work of pollination, commercial beekeepers feed them on the bee equivalent of protein bars and Lucozade – a mixture of artificial supplements, protein and glucose/fructose syrup. These sticky mixtures are freighted around the country in tankers to wherever the colonies happen to be. It's expensive and occasionally it proves cheaper to kill off whole colonies rather than feed them over the winter.

The artificial diets are in part a response to the decline of the bees' natural forage areas. Fewer plants means less natural food for the bees. But taking any living creature off its natural diet and force-feeding it junk food will inevitably result in poor immunity. Bees in particular have a much less adaptive immune system than we do, so if a bee becomes infected with a virus, its body can't respond by making specific antibodies.

Intensive bee farming

In a normal colony the queen can live and produce eggs for several years. In commercial beekeeping, breeding better queens is a profitable business and queens are regularly killed and replaced – sometimes as often as every six months. The queen is often subjected to the stress of having her wings clipped to identify her and also to temporarily prevent 'swarming' – when bees leave one colony, with a new queen and form another one elsewhere (this is the natural way for bees to ensure their survival and genetic diversity).

To ensure that colonies express the genetic qualities that beekeepers value, however, some virgin queens are artificially inseminated with sperm from crushed males. This practice, while not universal, is gaining in popularity as it becomes more difficult for honeybees to survive naturally.

Parasites

Bee populations have been affected by two types of mite infestations in recent years: a tracheal mite and the varroa mite that attacks the intestines. Varroa, in particular, depresses the bees' immune response, making it more prone to infection. Varroa also makes the bees more vulnerable to a crippling viral disease that produces wing deformity. These viruses can be spread from bee to bee but are also passed on from the queen to her brood.

In a healthy colony, varroa could to some degree be seen as useful, helping to cull the weaker members. But in already weakened artificial colonies we treat the infestation with insecticides such as coumaphos, a dangerous organophosphate to which mites rapidly develop resistance. This resistance can be passed on from generation to generation, and some evidence suggests that resistant mites actually thrive with repeated exposure. Likewise, fluvalinate creates resistance in the mite and disrupts the bees' feeding

Bees in the 'hood

Of the 256 native bee species in the UK, 25 per cent are now listed as endangered. Because of the loss of floral diversity and nest sites, due to intensive modern agriculture, domestic gardens are now the principal habitat for many species of wild bee. Why not get together with your neighbours and make your neighbourhood bee-friendly?

Information from the following organisations can help you make your gardens irresistible to bees:

Royal Horticultural Society
www.rhs.org.uk

The Bumblebee Pages
www.bumblebee.org

Bumblebee Conservation Trust
www.bumblebeeconservationtrust.co.uk

behaviour and ability to navigate. A bee that can't find its way back home will eventually die.

Pesticides

Pesticides used on food crops and other crops can affect bees, even at sub-lethal doses. Exposure can produce a kind of pesticide intoxication that makes the bees appear 'drunk', disrupts navigation, feeding behaviour, memory, learning and egg laying.

Fipronil, for example, impairs the olfactory memory process – which honeybees use to find pollen and nectar. Spinosad can make bumblebees slower foragers even at low doses. The insecticide imidacloprid can cause bees to forget where their hives are located. The French government banned imidacloprin in 1999 due to its toxicity to bees, the effects of which French beekeepers labelled 'mad bee disease'.

GM crops

GM plants account for around 40 per cent of US cornfields. A small study from the University of Jena in Germany found that pollen from Bt corn made the bees more vulnerable to death as a result of carrying the varroa mite. The bacterial toxin in the GM corn appeared to alter the surface of the bees' intestines, weakening them enough to allow the parasites to gain entry.

Bees can be exposed to GM in other ways – for instance, when they are fed supplements produced from GM crops such as high-fructose corn syrup. The effects of such a diet have never been studied.

Electromagnetic fields

As stories of CCD became more prominent, other theories have emerged. Mobile phones and overhead power lines have been blamed for interfering with bees' homing radar and preventing them from getting back to their colonies. It is not clear how sound this theory is. However, what is more well known is that high background levels of electromagnetic radiation can suppress immune response and disrupt the nervous system in a variety of living creatures. It is unlikely that bees are the exception to the rule.

Is it our fault?

Having been co-opted into industrial farming, commercial bees have become just another type of farm machinery. But the machinery is breaking down. Ironically, the giant farms that destroy natural habitats and use large quantities of pesticides are the ones that need bees the most, and are at the same time important contributors to their decline.

As far back as 1923, the philosopher and scholar Rudolf Steiner predicted that commercial beekeeping would wipe out bees within 100 years. Was he right?

Bees are sensitive, social creatures that have achieved a high degree of harmony and productivity in their colonies (each of which can house up to 60,000 individual bees). Their social structure is both productive and ordered. They are intelligent – and become more so with age. They learn and remember; they can use visual orientation to accurately estimate the distance from a nectar source while in flight. They construct colonies that are warm in the winter and cool in the summer. They also suffer from occupational diseases, just like we do.

The single coherent thread that connects all the various theories of CCD is a massive failure of these creatures' immune systems. It is entirely possible that CCD is the inevitable result of a overwhelming, ongoing assault on these creatures' delicate immune systems.

Humans have had a symbolic relationship with bees since they were first domesticated 7,000 years ago, but it is clearly not a relationship of equals.

We have long exploited bees for our own ends, even when we didn't really need to. Their use in oilseed rape is a good example. Oilseed rape plants are normally pollinated by the wind. However, by bringing bees into the field, yields can be increased by up to 20 per cent.

Because of our close proximity to bees and our deep reliance on them, any problems in our society, in the way we think and act, in our broader relationship with nature, will also affect theirs. The collapse of the bee population isn't just a scientific riddle to be solved with more and better science and technology. It could be a frightening vision of our own future.

What needs to happen next?

Defra spends just over a million pounds a year on bee health and welfare, through the National Bee Unit (NBU) at York. Of this, only around £180,000 is spent on research and this figure has been steadily declining over the past six years.

The NBU is charged with monitoring bee losses. Yet, even though some British beekeepers have reported dramatic colony losses of up to 90 per cent this year, Defra insists that no definite conclusions can be reached.

The US Department of Agriculture has responded more decisively, with a special study group to understand more about CCD. Its mandate is to focus on stress caused by transport, disease levels, husbandry, pesticide use and natural toxins found in plants, as well as the ability of beekeepers to spot disease in their hives.

How great does the loss have to be, and how long does it have to go on, before we also take action? Defra must take the plight of our bees seriously and direct substantial funds towards research that helps us understand why our bees are dying and what we can do about it.



'Because of our close proximity to bees and our deep reliance on them, any problems in our society and in our relationship with nature, will also affect theirs'



A non-consuming passion

After a moment of clarity in one of the world's largest shopping malls, actor and author **Robert Llewellyn** decided to get off the consumer treadmill by not buying anything for a year. He is going to 'make do' – could you?

As with so many suddenly-arrived-at decisions in my life, I think it's all to do with my mother. She passed away six years ago, leaving barely a trace in the world. Without any effort, thought or public commitment, her carbon footprint can only be described as petite.

My carbon footprint is a monstrous clubfoot with double elephantitis. It's a big ugly shadow over my life, and everyone else's, come to think of it.

So, yes, I decided to take a year off from consuming and 'make do'. To simply not buy anything new for a whole 12 months. I wish I could claim that the reasons behind my decision were from my powerful political commitments and a firm grasp of the global implications of rampant consumerism. In fact they were much simpler, revolving around a somewhat immature emotional reaction to the experience of Christmas shopping. I don't particularly like shopping, or shops, or buying new things anyway, so to start with it wasn't a hard decision.

I took my stand while in Australia with my family over the Christmas period. A proud moment of self-sacrifice, to be walking along a beautiful beach in Queensland and decide that consumerism depressed me. I had just climbed from my enormous bed in our spacious rented apartment, had a shower, dried myself with a towel from the stack of freshly laundered ones that were delivered every day, dressed myself in clothing that costs such a tiny proportion of my income I cannot work it out and gone for a gentle stroll along the beach.

We'd flown out there (my wife is Australian), driven around in big cars and then flown back via Dubai, where we spent even more money in the Emirates Mall, one of the largest emporia to consumerism ever constructed.

Although I criticise myself for my lack of awareness of the implications of my existence, I do know I'm a middle-aged Caucasian male living in a wealthy developed nation. I have enough socks, pants, T-shirts, trousers, shirts, shoes and coats to last five years, let alone one. I have three cars, so that's too many already, and I can repair them and keep them on the road. We have six working computers in our house, none more than three years old, so I don't need a new one of those. There are things I would love to buy new, like a bike. Mine is 25 years old; it still works but the brakes are rubbish and it squeaks no matter how much WD40 I spray on it. But the truth is, the more I list our stuff, the more embarrassed I feel.

I am of the generation who rejected consumerism as a political stance in the early

1970s. I lived in a squat in Oxford where we recycled everything before there was a term for it. Some of the things we recycled didn't, strictly speaking, belong to us. Slightly embarrassing, I know, but I was attempting to follow the 'all property is theft' dictat of the Oxford Anarchist Alliance, so certain morals and ownership rights were blurred concepts.

I later lived in a commune in Wales where our desired aim was to be a 'low impact' community. We had wind generators, an earth closet (a toilet made out of a bucket and you put earth over your poo, then buried it in the garden) and a massive compost heap. We only ate organic wholefood, which meant I was an emaciated runt in skin-tight patched jeans and red clogs. Yes, I was that hip.

It's important to remember, though, that during this period of oil shortages, the miners strike (the one they won), the three-day week, Vietnam and a few major Middle East wars, the concept of living a low-impact life was exclusively the domain of the radical.

This is no longer the case: in fact it's becoming a national obsession. I now live in an area where merchant bankers rest at weekends, and even they are buying hybrid cars. OK, so they are parked alongside the monster four-wheel-drive and the tinted-glass people carrier, but they recycle everything and are clearly anxious about the impact of the five or six long-haul holidays they take each year.

Another thing has changed since I last pooed in an earth closet on a Welsh hillside. I think it's called instant global connectivity. As soon as I posted a video blog on YouTube about giving up consuming for a year, I was flooded with advice and contacts from around the globe from literally thousands of people who are doing exactly the same thing. Making do, or 'compacting' as it's known in the States, is a big movement. I had no idea about it when I started and I felt rather deflated when I was told how many people had already done it. There is even a book about it. A New Yorker called Judith Levine wrote *Not Buying It* in 2003 (I got it from the library, obviously, I couldn't buy it), where she kept a rigorous account of her year without consuming.

It was such a familiar story: the difficulties you immediately encounter and how every day there is a little challenge. Levine didn't do this because of poverty. She realised, as I did, that a huge amount of our consuming is for reasons other than direct, practical need.

It was also chilling to discover how much further other people had gone. For example, I made this commitment purely to myself, I didn't try to impose it on my family. When I did ask them how they'd react if I suggested we all did the same thing, they didn't stop laughing for a good 10 minutes. Other people have gone the whole hog: not buying friends or family birthday or Christmas presents, but making something instead. They won't go to restaurants or order take-outs and are fiercely reducing their carbon footprint by not going in any cars, only using public transport or bicycles.

There is even a man in New York who has decided to do without anything other than basic food and medicine for a year. He has a small child still in nappies, and he's worked out that he can use old wool or something instead of disposable 'diapers'. He won't even buy toilet roll, and he's using an earth closet, in the middle of Manhattan! How does that work? It was pretty challenging on a Welsh hillside, let me tell you!

> 'I live in an area where merchant bankers rest at weekends, recycle everything and are anxious about their five or six long-haul holidays a year'

While I got slightly confused support from my wife, my children started out utterly disinterested in my quest. Now they are my fiercest observers, able to catch any discrepancy. And there have been a few. I've been out to dinner with friends and paid for the meal, I've bought people presents, and cannot face my children's birthdays with the offer of a hand-knitted shawl or a really cool drawing of a boy on a skateboard, even though my knitting and drawing skills are first class. I am just hoping that my ongoing and now very public struggle is the best example I can give my kids about the hollow experience of endlessly desiring and buying new stuff.

Four months in, it is becoming much harder. I am constantly stopping myself from auto-buying the little luxuries most of us don't even think about. A couple of weeks ago, a friend of mine was featured in a Sunday tabloid. I saw the paper in the local garage and bought one without thinking. When I got home, a neighbour had bought one for me, knowing I would probably be interested in the story but wouldn't be able to buy it. I felt such an idiot.

Today I have just drooled over some new software: an amazing update on a package I regularly use. It looks brilliant and is the sort of thing I would normally have jumped at without hesitation. Not this year, I'm afraid, I'll make do with what I've got.

Instead, like my mum always used to, I am repairing things. My watch broke in mid-January and in the past I would have bought a new one. This one has been in the repair shop for eight weeks now and it's probably going to cost me more than buying a new one, so that exercise proved a bit counter-productive – and I've got used to not wearing a watch.

More constructively, I've sewn patches on two pairs of old trousers I use at home and in the garden and they feel really good. They were in a bag, about to be sent to the recycling bin, but now I wear them with pride. I have glued together the broken lens on an old video camera and it works better than expected, I have had two punctures repaired on the car and had an old pair of boots re-heeled.

This is also the first thing I have done in ages where the mere description of my odyssey has made everyone I've met pause and reflect. Not always positively. I've had plenty of teasing and critical questioning, my motives are doubted, my actions analysed. 'Do you buy newspapers?' No. 'What about new video tapes for your camera?' Not yet: been recording over the old ones containing experimental rubbish. Many of the questions have been difficult but they say as much about the questioner as they do about me. The fact that we all over-consume is so obvious it's not worth mentioning in polite society. It would be a dull topic at a sparkly dinner party, but if it comes up that you have stopped buying anything new – not for ever, just for a year – believe me, interesting things begin to happen.

Robert Llewellyn is a 51-year-old sold-out ex-anarcho-syndicalist who has spent his life struggling to challenge sex role stereotypes, the class system, rampant consumerism and racism. He has constantly failed and now lives in the heart of the Cotswold banker belt, surrounded by horses with better healthcare than anyone outside Denmark can imagine. Next month he begins a regular column charting his progress.



CAN LAWYERS SAVE THE WORLD?

A new species of eco-lawyer is emerging from the legal undergrowth. **James Thornton** advocates a wig-and-gown approach so campaigners can strenghthen their case against unethical corporations. Photography **Rosalie Portman**

Around the world, a tribe of activist lawyers dedicate their careers to human rights and the environment, working from inside charities. In European countries, there are healthy numbers of such lawyers for human rights. Not so for the environment. There are, of course, good lawyers in the UK and rest of Europe doing environmental work in the private sector, and some who do *pro bono* cases. Yet there are few who spend their careers inside environmental groups, wielding the law as a tool to protect people and the planet, to further campaigns and to level the playing field between the powerful and other living beings. That may be about to change.

But step back a minute. Let me take you to lunch with Murray Gell-Mann in the faculty club of CalTech, in Pasadena, California. CalTech is famous for the Nobel laureate scientists on its faculty.

Gell-Mann won his Nobel in physics for figuring out sub-atomic particles. He named the quark. He was also serving as the environmental trustee at the MacArthur Foundation, which gives away the legendary 'genius grants'. Over his poached salmon, the white-haired Gell-Mann looked up through thick glasses and asked me in a New York accent how was I going to save the biodiversity of southern California.

As a young lawyer, I had just founded the Los Angeles Office of the Natural Resources Defense Council (NRDC). The leading American environmental law and science charity, NRDC is a tough organisation with a staff of 300 and a reputation for beating the best corporate law firms in court.

Since the office was meant to take care of the Los Angeles environment – no small job – I was focused on air pollution, water pollution, keeping huge trash incinerators away from low-income neighbourhoods, and similar human-centred, urban-oriented issues. I was planning to get to biodiversity later, so I had no good answer for Gell-Mann.

That galled me. So I started to ask, where is the biodiversity in Southern California? It turned out that a key piece was along the undeveloped coast, from LA down past San Diego to the Mexican border. Trouble was, it was also the most developable land in the country, as well as the most rapidly developing. The development juggernaut was driven by a handful of companies who owned virtually every undeveloped acre along the coast that was not owned by the military.

Stopping a juggernaut is never easy. One needs to find a sensitive point and then apply the right tool. How could we level the playing field between an environmental group and some of the most powerful land companies in the world? It was clear from the start that dialogue and campaigns would get us nowhere. Mayors and other public officials told us of their despair in engaging the companies and trying to get them to moderate their plans, to be sensitive to the values of the coast, to protect some of it at least, to harmonise their plans with the natural habitat. They got nowhere.

'The great thing was, we never had to sue. The threat of what the law could do was enough. Using the law strategically we'd levelled the playing field'

Walking in the coastal hills and meditating how to go forward, the image of a small bird flashed into my mind. I went back to the office and made calls. Within an hour I was talking to a scientist at Cornell University's famous ornithology lab. He had just completed a monograph on the threatened California gnatcatcher, a small bird that lives in the coastal hills.

The gnatcatchers that live from LA down to the Mexican border, it turned out, are a separate race of the bird. Even better, they live only in undeveloped coastal hills, from the beach up to the first ridge. And they need about 40 acres per pair to breed. The gnatcatcher's territory overlapped exactly with the most biodiverse coastal land in southern California. If we could protect the bird, we could protect the whole habitat.

The Endangered Species Act gave us the tool. We filed an application for listing the California gnatcatcher as a species that would be endangered by the planned development. This hit the sensitive spot with the developers: if the bird was listed, all development could be halted or reduced.

The owners of virtually all the remaining undeveloped coastline in Southern California met with us a few days later. This began a negotiation that went on for several years. The result was an agreement that saved some 350,000 acres for biodiversity, an area roughly the size of Greater London spread out along the coast. It became a leading model in the USA of a complex multi-species preservation plan.

The great thing was, we never had to sue. The threat of what the law could do was enough. Using the law strategically we'd levelled the playing field. A few public-interest lawyers and their colleagues had pulled off an agreement that no one else had dreamed of. Least of all me at lunch with Gell-Mann.

That doesn't mean it was easy. It took several years of tough negotiations. The developers believed they had the right to develop every square inch of the

‘Can the rights of animals trump our rights to exploit them? Can a lawyer walk in to court and argue on behalf of creatures that will be extinguished?’

land. The only reason they were willing to negotiate was that they knew the Endangered Species Act allowed us to have a case ready – if the negotiations failed – that could have slowed or stopped the development entirely.

Using the law lets you achieve things you might otherwise aspire to but could never reach. Here is a powerful example of how the law, strategically used, can help the environment and change policy. Ronald Reagan came to power and stopped enforcing the national environmental laws. Within a year of Reagan taking office, the number of cases against polluters under the Clean Water Act fell from several hundred a year to zero. The question was whether citizens could make up the difference. So I started a project with a small group of colleagues, called the Citizen Enforcement Project.

Could we go to court and successfully pick up the enforcement the US government had dropped? We picked a law, the Clean Water Act, which requires monitoring and reporting by companies of their discharges into rivers and streams. The law makes the discharge reports public. And crucially, it gives citizens access to the federal court to enforce the permit obligations. We had 60 cases against water polluters in federal court in six months. We won every one, including against some of the nation’s most powerful companies.

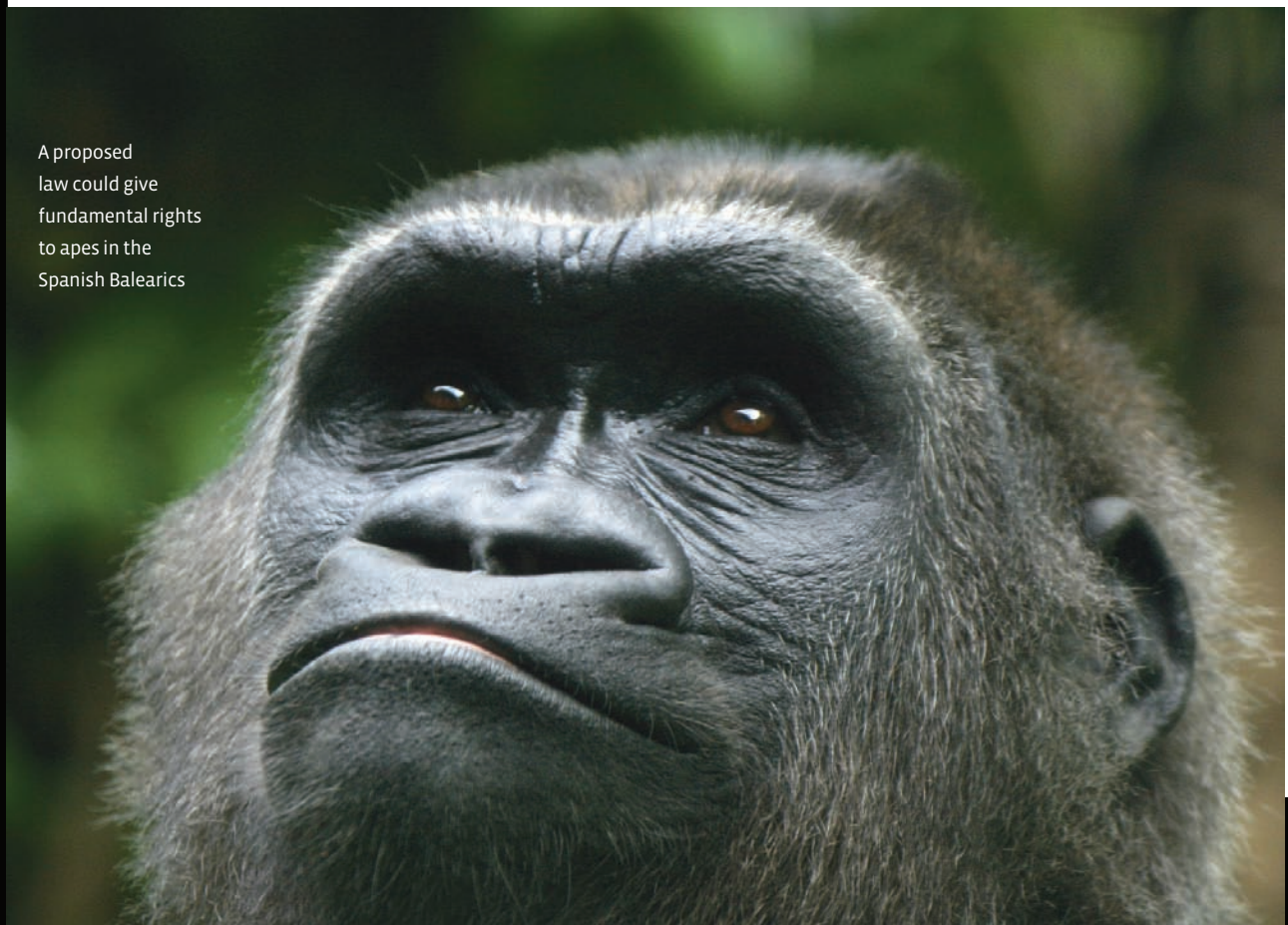
We went on to bring dozens more enforcement cases and won them. At a certain point, a new administrator of the Environmental Protection Agency took office and called me to Washington for a meeting. When I got there, I was shown into a room containing dozens of government lawyers. The new administrator asked me to give the government lawyers a seminar on how to do federal enforcement cases, because, as the administrator put it, ‘You’re pretty good at it, and we seem to have forgotten how.’

Our success in court embarrassed the government to start enforcing the law again. There was no other way to get them to do it. And there was certainly no other way to clean up the toxic discharges in the meantime than to do it ourselves, by beating the polluters in court and settling with them at the conference table.

Visionary law

We intuit that animals are sensitive, intelligent and have feelings. We see that plants are miraculous in their ability to thrive on light and water. We sense the value of other living things every time we crowd into urban parks for a bit of sunshine.

So can the rights of animals and ecosystems trump our rights to exploit them? Can a lawyer walk in to court and argue on behalf of creatures that will be



A proposed law could give fundamental rights to apes in the Spanish Balearics

extinguished by development?

A movement began in 1972 to extend rights beyond people to other living things. In *Should Trees Have Standing?*, American law professor Christopher Stone put the case that all living things should have rights independent of human property rights or other human interests (see also box on *Wild Law*, page 42). They should be given standing in court, he argued, and special guardians should be recognised to speak on their behalf.

This was a radical position. It remains just as radical today. Imagine that all living things had rights. Imagine that courts balanced their rights against our rights to exploit them, that courts weighed the rights on both sides, as it does in a divorce case.

Our legal systems are built on human interests. People have property rights in other living things. Other living things rarely are granted any rights at all. The sad truth is that legal systems have not yet evolved far enough to extend rights beyond humankind. In this the law lags behind the more sensitive citizen.

Activists, though, are arguing for the recognition of rights in other creatures. A California project, Reef Check, is focused on the worldwide collapse of coral reefs. They are seeking a million global signatories to their Declaration of Reef Rights, with the aim of presenting it to the heads of the 101 countries with coral reefs in time for the 2008 Year of the Reef. The Declaration states boldly that reefs have rights to be free from pollution, over-fishing, bleaching and other human-induced problems. It is a ringing endorsement of rights for one of the Earth's most diverse communities.

In Europe, the Spanish Parliament has debated a law to give fundamental rights to our closest relatives, the great apes. The proposed law would recognise that apes are intelligent, self-aware creatures that should not be tortured, abused or neglected. So far, that position remains too extreme for the Spanish or any other national government. Voices were raised in the debate against recognising fundamental rights in any creatures other than ourselves.

It may take a long while yet to grant rights to other species at national levels. Experiments can happen more easily, though, at local level. The Balearic Parliament, the local authority for the Balearic Islands, an autonomous region within Spain, has passed a resolution to grant the fundamental rights to great apes that the national parliament is shy of granting.

Another local example comes from the town of Tamaqua in rural Pennsylvania. A town of some 7,000 people, Tamaqua passed a sewage ordinance in 2006. Sewage ordinances are seldom the stuff of history. There is ordinarily not much 'fight them on the beaches' heroism in them. This one may be different.

The garden variety sewage ordinance assumes





Are you ready for wild law?

Law is one of the most powerful tools used to regulate human behaviour, and our existing legal system can be used much more effectively to challenge environmentally damaging practices. But there is another level at which our legal system has done little to encourage the sensitive understanding of our connectedness to all living things on earth.

Wild law, or Earth jurisprudence, is a philosophy of law based on the idea that the Earth is not merely a collection of 'resources' to be exploited; and humans, as members of an Earth community, cannot ignore the rights of the rest of that community, which makes our own existence possible.

To recognise how radical wild law is, remember that that the law recognises various bodies such as corporations, but also governments, foundations, universities, churches and other groups as 'people'. These largely abstract entities have legal rights, particularly property rights. Yet other entities that are concrete in every sense, such as rivers, trees and animals, have no legal rights at all.

Giving rights to such entities requires not only vision, it requires courage to accept the consequences. It has been argued that under such reforms a power station in Nova Scotia could be sued on behalf of polar bears, whose habitat is being destroyed by the degradation of the air. If the bears won the case, people in the local area would have to find other ways to generate electricity. Wild law could allow forests to demand that this magazine be published only electronically.

In a world where quick fixes that don't disrupt our lives are continually being sold to the wider community, the question is: how much are we willing to put our money where our mouths are, and how much ground are we, as humans, ready to give to save the planet?

Resources:

ClientEarth
www.clientearth.org

UK Environmental Law Association
www.ukela.org

Center for Earth Jurisprudence
www.earthjuris.org

corporations' rights to spread sewage sludge on land. Not so in Tamaqua. Instead, the ordinance recognises natural communities and ecosystems within the borough as 'legal persons' for the purposes of enforcing civil rights.

This is what Christopher Stone argued for in 1972: non-human beings recognised as having legal standing, and rights to balance against our property rights. What a difference this would make, if the jurisprudential ripples spread out from Tamaqua.

Can Tamaqua change the world? Will other local authorities follow, and will the idea be picked up by higher level legislative bodies? Will the ordinance itself be successfully used to protect living things when it is tested in court? Much remains to be seen.

Gritty reality

Maybe it should come as no surprise that there are other creatures that lack rights. We may think of Europe as an environmentally aware region. But even people have no right in European law to a clean and healthy environment.

Some countries are experimenting. In France, the constitution was amended in 2005 to include a bill of environmental rights. It recognises the rights of future generations, the rights of the population to information and an obligation on the government to uphold sustainable development.

Will it matter? The problem is that these rights have no remedy. The court in France that will decide is the Conseil Constitutionnel (the Constitutional Council). Citizens have no access to this court. Only parliamentarians may ask the court to clarify matters of law. If you believe your environmental rights, guaranteed under the constitution, are being violated, you have no court to go to.

When is a right not a right? When you can't enforce it. A cynical observer might think that French politicians managed to receive some very green press, knowing that there was little danger the newly recognised rights would bite.

The problem of access to the courts is not confined to France. It is widespread in Europe, starting with the EU itself. As a citizen of Europe, one would assume you could go to the European Court of Justice to complain when a country, or the EU itself, is violating the law.

Take an example: drift-net fishing in the Mediterranean has been banned outright since 2002. Italy and France have not lifted a finger to enforce the ban. As a citizen, or an environmental group, you might want to go to the courts of Europe to enforce the ban.

If you did go, you would find the courthouse door closed. For most purposes, European citizens have no access to the European courts when it comes to environmental matters.



Save the gnatcatcher: A legal team used the Endangered Species Act to force Californian developers to the negotiating table

Well, you might assume, all will be well anyhow. The EU must be watching to see if the member states enforce the laws that come out of Brussels, yes? It must send inspectors out and track enforcement.

The answer is no. The EU has no environmental inspectors. It has hundreds of meat inspectors, but not a single environmental inspector to deploy within Europe. Nor does the EU track enforcement of the environmental laws in European countries. It simply doesn't do it.

Over the barriers

In a case like the drift net ban, what do you do? The EU has not enforced the ban. France and Italy have not. Unless the ban is enforced, fish will be strip-mined from the Mediterranean.

Citizens could enforce the ban. But they need public interest lawyers to work for them: lawyers who dedicate their career not to private gain but to defending people and the environment. There are few lawyers in the European countries doing this work.

Professor John Bonine at the University of Oregon law school looked at the numbers in a recent study. He compared the number of lawyers at environmental charities able to bring cases in the US to the number in the EU. He identified around 500 such lawyers in the US for a population of 300 million, compared to just 20 in the EU for a population of 500 million.

Law is not much used to help the environment in Europe. Professor Nicolas de Sadeleer, of Oslo University, led a 2005 study for the EU. One of the things his team examined was the number of civil cases filed by major environmental organisations. The average over the eight countries examined was fewer than five such actions a year.

Is this because there are no environmental problems in EU countries? Hardly. Consider these examples:

- Citizens are often denied environmental information by government agencies, or charged extortionate prices for it;

'The EU has hundreds of meat inspectors but not one for the environment. Nor does it track enforcement of environmental laws'

‘The right to a healthy environment will never fully develop, and will wither, if not given expression in legislation and defended vigorously in court’

Italy and France are flouting the 2002 Mediterranean drift net ban with impunity;

- Every year 350,000 people die prematurely in EU countries because of air pollution, mostly from diesel vehicles, according to the European Commission;
- Raw sewage spills in to the Thames with every rainfall, because the Victorian storm sewers have not been updated, legally required since 1991;
- In Western Europe, 15 per cent of people had drinking water contaminated by bacteria, increasing to around 30 per cent in Eastern Europe, according to the European Environment Agency;
- European car companies agreed to significantly reduce CO_2 emissions of their cars by 2008, but will not come close to meeting their pledge.

The list could go on much further. Often, laws passed at the European level are poorly applied and enforced in member countries. Enforcement by the EU itself is slow and spotty. There are 15,000 corporate lobbyists in Brussels. Their efforts to dilute laws and blunt enforcement are too often effective. What can citizens do about it?

A new approach is in the works. It’s called ClientEarth, a charity under the laws of England and Wales. It’s the first environmental law group to operate at the European level. We aim to level the playing field, addressing issues of corporate accountability and government failure to implement the laws.

ClientEarth is opening a Brussels office in September of this year. We will work closely with the NGO community, providing legal expertise to add value to the campaigns and other work currently underway.

Our right to a healthy environment is still in its infancy. Like all fundamental human rights – including those to liberty and free speech – it will never fully develop, and indeed will wither, if not given expression in legislation and defended vigorously in court.



France and Italy openly flout the EU ban on drift-net fishing in the Mediterranean

GREENPEACE/REYNAER

We want to give equal ammunition to citizens and the environment. There is an opportunity to: spearhead freedom of information claims against the EU; bring enforcement actions in member countries against irresponsible corporate and government behaviour; work with citizen groups across the EU to help make sure laws are properly transposed and implemented; and push for better and more enforceable laws.

Many laws are unenforceable as written. The UK's draft climate change bill is one of these. The bill sets a statutory target to reduce the UK carbon emissions by 60 per cent by 2050. That excludes aviation, but still sounds pretty good. Problem: there is no way to hold the government to it.

The bill gives no citizen right of action. Without citizens' ability to go to court and get an order, the government has no outside check. One must trust the government. Yet that would be naïve. A government will not consistently do the right thing unless citizens can bring it to court. Until citizens can enforce government obligations, they are so much hot air. Unless citizens can enforce their own rights, those rights are phantoms. When governments fail to follow the law, only citizens themselves, using the courts, can gain protection for the environment.

It is not easy. Because substantive rights are seldom recognised, you have to fight with the tools to hand. Often the best tool available is a law giving rights to



The Aarhus Convention

Part of ClientEarth's work to protect the environment involves using the Aarhus Convention as a conceptual map. Forty-five separate countries, including the UK and the European Union have now ratified the Aarhus Convention, described by United Nations Secretary-General Kofi Annan as 'the most ambitious venture in environmental democracy undertaken under the auspices of the United Nations.'

While the convention is an instrument to protect the environment, it may also be seen as an instrument promoting democracy through greater freedom of information.

Specifically, it aims to:

- Allow members of the public greater access to environmental information held by public authorities, thereby increasing the transparency and accountability of government;
- Provide an opportunity for people to express their opinions and concerns on environmental matters and ensure that decision-makers take due account of these;
- Provide the public with access to review procedures when their rights to information and participation have been breached, and in some cases to challenge more general violations of environmental law.

As yet, few European citizens are aware of their rights under Aarhus. However, in practical terms, the convention means, for instance, that local residents must be given a say in new road schemes or in the siting of household-waste incinerators.

Members of the public also have a right to know what state their environment is in and, in some circumstances, to sue governments or polluters that attempt to cover up environmental disasters. The convention also gives campaign groups, such as ClientEarth, a legal foothold from which to fight often complex legal cases with wide-ranging implications for environmental protection throughout the EU.

information or to a review. The challenge is to use the tools available while pushing the law forward until it catches up with the leading edge of environmental consciousness.

Campaigns remain vital. Where a campaign can effect change it remains the tool of choice. But sometimes a campaign alone is not enough. It may not clean sewage from the Thames, reduce noise at Heathrow, stop drift net fishing in the Mediterranean, make France close 8,000 illegal landfills or force EU fisheries ministers to lower the catch of cod to sustainable levels. These are the kind of things a lawsuit can do. And an NGO that wins lawsuits will be listened to more readily when it next campaigns.

Lawsuits can address the complacency of administrations and the abuse of economic power. When administrations become lax in enforcing the law, a case brought by a citizens' group allows the court to issue a wake up call, requiring the administration to perform its duty. And as the case of the gnatcatcher shows, the credible threat of a lawsuit can force people with economic power to look beyond their narrow interest.

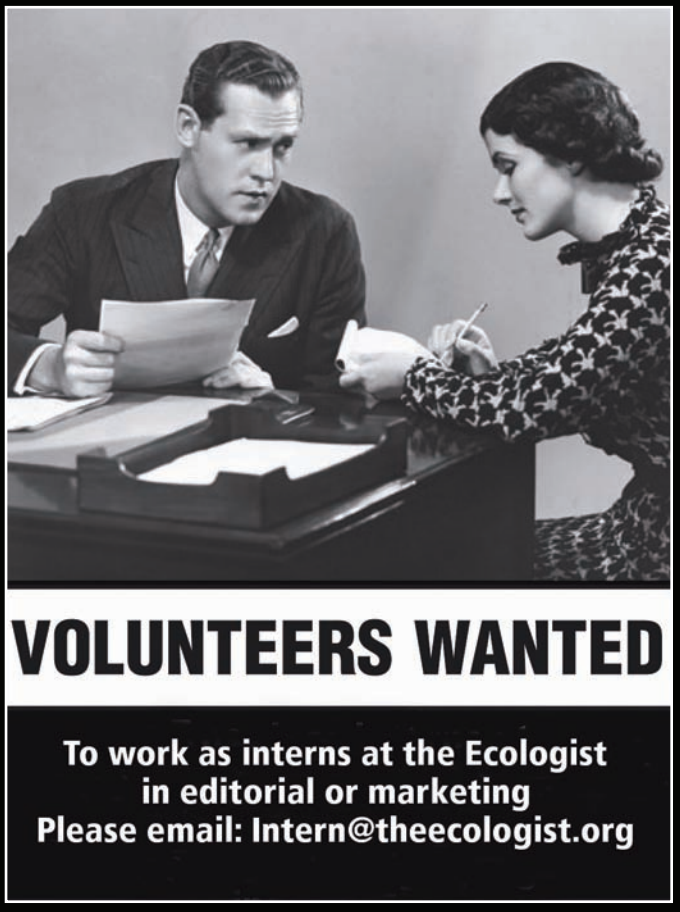
When the remedies line up correctly, the law can require those with economic muscle to slow down for a moment and take account of the broader living community.

If the Earth and her citizens are going to protect their environment in the ever more complex times ahead, they need lawyers on their side. Lawyers who develop a strategic vision of how the law can serve not just economic interests but the lives of people and all other living things. For myself, the Earth is my client, together with all who sail upon her.

James Thornton is CEO of ClientEarth. He is a solicitor of England and Wales and a member of the bar of New York and California, and the Supreme Court of the United States.

'Campaigns remain vital. But sometimes a campaign is not enough. An NGO that wins a lawsuit will be listened to more readily when it next campaigns'





Safe as houses?

The insurance industry is set to abandon two million British homeowners to the perils of climate change. **Jon Hughes** and **Rebecca Bole** report



As natural disasters become more frequent, will insurers be taking on high-risk British homes prone to erosion or flooding?

Alamy

Lloyds of London is one of the pillars of the business world. Since it came into being in 1688, the insurance house has facilitated world trade – by insuring shipping and other major ventures abroad. The establishment is famous for its Lutine Bell, which was salvaged from a bullion ship, and was traditionally rung to herald important announcements to underwriters and brokers. One stroke for bad news, two for good, the bell is recognised throughout the world as the symbol of the organisation whose fortunes are linked inextricably with natural and man-made catastrophes.

At the turn of the year, addressing the World Affairs Council in Washington, Lloyds' chairman Lord Levene metaphorically rang the Lutine Bell – once. 'Today the insurance industry faces the prospect of a $100 billion national disaster – twice the size of Katrina,' he told his audience. 'We need to wake up to the truth about catastrophe trends and radically review our public policy.'

The figures underlying his statement are stark. Since the Seventies, insurance losses have risen at an annual rate of around 10 per cent, reaching $100 billion dollars in 1999. Losses of this scale are ominous, meaning that the total damages bill will double every decade. If this trend continues – and Levene believes that it not only will, but that 'we can only expect this to accelerate as climate change takes hold' – it means that by 2065, insurance losses from climate change will equal the total value of everything that humanity produced in the course of a year.

And that is simply unsustainable.

In the aftermath of Hurricane Katrina, the Association of British Insurers (ABI) warned that home premiums in the UK could soar. At the time, ABI spokesman

Malcolm Tarling said: 'We're not expecting an immediate premium increase directly as a result of Katrina, but the wider issue of climate change is beginning to have a very serious impact on insurers.'

It's not simply weather events hitting Britain that could force up the cost of insurance, it is the nature of the industry's global structure. Eighty per cent of the losses accruing from Katrina fell on foreign reinsurers, such as Munich Re, Swiss Re and Lloyds. These powerhouses underpin a system of domestic and commercial insurance that, by and large, we take for granted: to protect our homes and allow us to drive, and enable business to grow. Without insurance, the very notion of global trade becomes untenable. Yet the prospect of climate change – with sea-level rises and stronger storms – suggests that premiums could first become prohibitive, before becoming unavailable to many. We can already begin to see this happening in the domestic insurance market, with mortgage lenders and insurers threatening to withdraw their financial support for homes standing on flood plains in the UK.



The Lutine Bell at Lloyds: chairman Lord Levene warns of a '$100 billion national disaster'

Frank Martin/BIPs/Getty Images

Opening the floodgates

The Department for Environment, Food and Rural Affairs (Defra) estimates that today, 2.1 million properties – housing five million people in England and Wales – are at risk from coastal and river flooding. That equates to approximately £250 billion in assets. There are also 185,000 businesses situated on these flood plains.

In Britain, the value of weather-related claims reached £6 billion between 1998 and 2003 – twice the total in the previous five years. If carbon dioxide levels in the atmosphere double by 2080 (which is in line with 'business as usual' projections), then annual flood costs in the UK could increase almost 15-fold to £22 billion, according to the ABI report *Financial Risks of Climate Change* (FRCC). Premiums would reach such a level that it could spell the end of the era of home ownership.

In order to secure a mortgage in the UK, lenders require buildings' insurance to be in place. This covers the cost of rebuilding your home should it be destroyed or damaged due to dangers such as flooding, subsidence or fire – the risks of which all increase in a warming world.

Currently, the insurance and mortgage-lending industries are not obliged by law to offer insurance to homebuyers. Market forces rule, and the insurance industry is essentially saying that the risks are too great or too uncertain for it to want to be involved, almost at any cost.

Accordingly, the ABI, which represents 97 per cent of the UK insurance industry, has only committed to provide flood insurance until 2010. Jane Milne, head of property at the ABI, warned of developing housing on flood plains: 'Some local authorities carry on as if flooding was not a threat. We cannot guarantee to insure some of the homes they build. This would mean no mortgages for these people.'

So, a considerable number of British homeowners can only feel safe in their beds for the next three years. Cold comfort, indeed.

A crowded Isle

The government, insurers and mortgage lenders are all in agreement on the actual and potential threat of flooding in the face of climate change. Why, then, are the authorities allowing developers to throw rows of houses up on known flood plains, when we can only expect the flood risk to increase as the climate changes?

One reason is our national obsession with home ownership. For numerous social and economic reasons, people are demanding more housing to be built on our crowded island. We are running out of space to put these new homes and are resorting to risky sites to meet demand.

The Town and Country Planning Association estimates that we need 200,000 new homes a year, just to meet current levels of demand. With Defra and the Environment Agency (EA) rightly under pressure to avoid developing on greenfield sites, the outcome is that we are developing brownfield sites, the majority of which are located on flood plains.

The ABI report says: 'In the past 20 years, over 350,000 residential properties have been built on floodplains in the UK, with more than 20,000 being built between 2002 and 2005.'

The government has designated four main growth areas to address the housing shortage in the South East – the Thames Gateway, Ashford, the M11 corridor and the South Midlands – each of which faces differing levels of flood risk, managed by defences of varying standards and qualities.

By 2016, 200,000 new homes will be built in the South East alone; and 89 per cent of the 120,000 new homes in the Thames Gateway development near London will be located in the tidal flood plain, below current low-tide levels. It is widely believed that flood defences in the area are inadequate.

A second ABI study, from 2005, *Making Communities Sustainable*, states: 'The study shows clearly that the new developments in the Thames Gateway, Ashford, the South

Midlands and the M11 corridor could increase the costs of flooding by more than £50 million each year if steps to manage potential losses are not taken – a figure that could increase tenfold once climate change effects are felt in full. But with some creative thinking and effective action, this additional flood risk in the growth areas could be reduced substantially.'

But creative thinking and effective action require a certain level of cooperation that is lacking in the field of flood defences.

Poor defences

Defra has the ability to set policy, which can be adopted or ignored by the EA, local authorities, internal drainage boards, planning offices and developers. Defra allocates grant aid to help finance flood defence projects, but the local authorities and developers have to plug the gap from their own budgets.

In explaining its place in the scheme of things, a statement on the Defra website says: 'Authorities have permissive powers to undertake works to manage risk – there is no statutory obligation on them to do so and thus no statutory right to levels of protection.'

Central and local government spent £600 million in 2005-2006 on flood defences, which in real terms is 40 per cent more than 1996–1997 spending.

In advice to stakeholders, Defra states: 'Despite these large increases, we still have to prioritise proposed projects. Unfortunately, it is not possible to justify defending all locations to the same standard or at all in some cases.'

The EA has committed to spend £200 million on flood warning systems in England over a 10-year period up to 2012–13. By way of comparison, during the flooding of 2000, a total of 10,000 properties were damaged, at a cost of £1 billion.

Natural catastrophes are inherently unpredictable, and the insurance industry is based on predictability. To date, insurers have been able to capture past storm and flood data and use it to fairly accurately predict future activity, and price risk accordingly. They are now struggling to predict the effects of climate change on weather patterns.

In the United States, hurricanes Andrew (which struck Florida in 1992) and Katrina (New Orleans, Louisiana and Mississippi in 2005) were the heaviest recorded storms to hit land and caused human and financial devastation across the coast.

Correspondingly, the insurance value of properties in US coastal areas has doubled over the past decade – to more than $7 trillion, with Florida and New York both having a value of $2 trillion each. The combination of increased frequency and severity of natural catastrophes, rising asset values and increasing coastal population is a recipe for disaster.

If either location is hit by a hurricane of Katrina proportion, the impact on the global economy would be severe. As Lord Levene put it to his expert audience: 'In New York's case, almost $1.4 trillion relates to commercial property. Imagine the disruption to the economy if even 10 per cent of those businesses were forced to close down.'

Little wonder the insurers are heading for the hills and devising policies to force industry to adopt carbon neutral policies. If the market will not provide insurance cover for people living in disaster-prone areas, governments will be forced to step into the void. But the state's reaction is not always efficient, as New Orleans can testify. According to *The Economist* in March this year, less than 3 per cent of the 115,000 families who have applied for help have received payments.

If the government of mega-wealthy America cannot look after its own in the wake of a natural catastrophe, we have just cause to be concerned. With the anticipated increase in natural disasters, governments would soon run out of money to bail us out.

Before that, we face the spectre of millions of houses becoming unsaleable unless, that is, the government agrees to underwrite insurance policies.

In his speech, Levene said that Lloyds is now actively planning for a stormy future – before adding, 'But I seriously question whether all policymakers, businesses and homeowners are doing so.'

Climate change is often viewed as an abstract or distant problem, but clearly its impact has beaten a path to your door and the Lutine Bell has tolled.



Coastal erosion in Norfolk – damage that insurers expect will increase due to climate change and see home insurance premiums soar

Corbis

Upside-down houses

Insurers are not so much concerned with a warning of floods, but whether these houses at risk are inhabited or not. In its FRCC report, the ABI is calling for homes to be built upside-down, with living accommodation and all electrics to be located on the first floor of the building. It also urges for legislation to force developers to take responsibility for flood defences. 'Asking developers to pay could help to ensure that the market takes into account the full costs of development,' it says.

If this were to happen, who would decide the level of flood defences? Would private developers be obliged to maintain flood defences? What recourse would homeowners have in the decades to come, if the developer were no longer in business? And would the housing be affordable to anyone but the most wealthy?

If insurers are withdrawing their capital from an area, it is a clear indication that the risks are too high for them to profitably cover it.

Jon Hughes is the Deputy Editor of the *Ecologist*. Rebecca Bole is a reporter on *Insurance Day*.

Here is the weather report

With April in the UK being more like June, and May more like April, the weather seems to have flipped. **Merlin Sheldrake** tries to make sense of a record-breaking year for the setting of weather records

Until late April, Australia lay in the grip of the worst drought in its history. River after river dried up, and in the absence of winter rain, the government contemplated cutting off water supplies to the Murray-Darling basin, an area of land the size of France and Spain accommodating 72 per cent of the country's farm and pasture land. This was the only possible step that could have been taken to guarantee retention of enough drinking water for the population.

Without water, the crops would have certainly failed, resulting in a food shortage, increase in food price and uncertain futures for the region's 55,000 farmers. Five years of drought and evaporating incomes have already devastated many smaller towns, with agricultural production falling by 25 per cent in the past year. Communities in New South Wales lie abandoned, with many of the residents forced to migrate to the cities. Thieves even stole water from storage areas as its scarcity increased.

The drought threatened three-quarters to a whole one per cent of the nation's GDP – the amount, according to the Stern report, it would cost countries to limit greenhouse emissions and slow climate change if action was taken now; another reminder of the economically devastating potential of a change in climate.

Still, however, the Australian government led by Prime Minister John Howard is denying links between climate change and the drought. Australia is the world's second highest emitter of carbon dioxide per capita, and has refused to sign the Kyoto protocol, despite climate models' predictions that it would be one of the first areas to be seriously affected by climate change.

In contrast with such dryness, on April 22nd areas east of Sydney were hit with flash floods triggered by thunderstorms. The Australian Bureau of Meteorology said that nearly 100mm of rain fell in just a few hours – around 75 per cent of what is usually expected for the entire month.

The country's struggle to manage water resources is an indication of how unprepared even the worlds most developed countries are for dealing with such environmental crises.

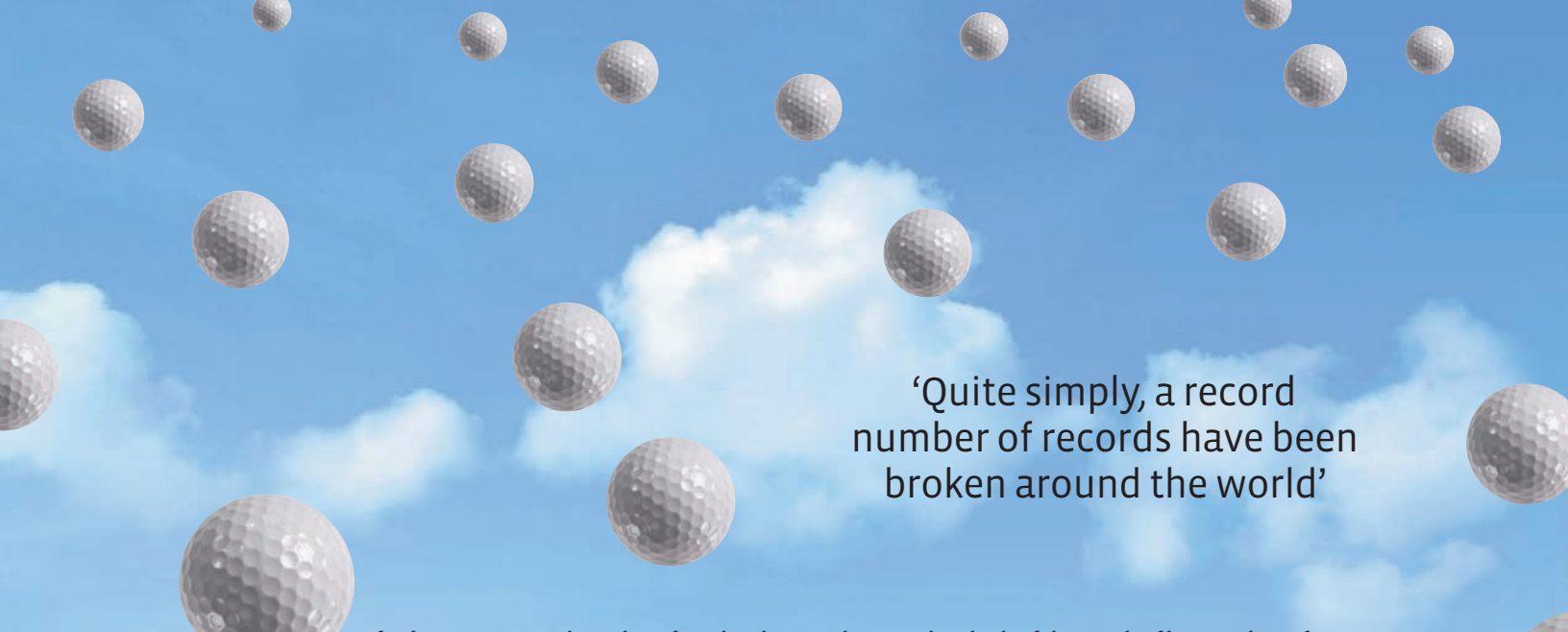
If Australia's experience was a one-off then it could be seen as an aberration, but extreme weather conditions have appeared elsewhere.

At one stage last summer over 60 per cent of America lay in a state of drought or abnormally dry conditions, and was scorched by record temperatures. The United States experienced its second warmest March on record, over 5°C higher than the national average for the month. The drought in the US's mid-west and south west was crippling. It was not a one-off year, much of the region having languished in severe drought since 2000. According to a study published in the April issue of *Science*, this marks the onset of a long, dry era, comparable to the multiyear droughts of the dust bowl period.

A winter heat wave in New York had the sunbathers out in Central Park in the early part of this year. Temperatures during the winter months usually peak in the high 30s, but in January temperatures reached the 70s in some parts of the state. On the 6 January, before dawn, the temperature in Central Park hit 65°C, breaking the previous record



‘Australia’s struggle is an indication of how unprepared even the world’s developed countries are for dealing with environmental crises’



'Quite simply, a record number of records have been broken around the world'

of 63˚C, set in 1950. I chatted to a friend in the city who moaned that she couldn't wear a jacket all month.

Meanwhile, on the west coast of America, in the middle of this same month, yet more records were set as a rogue cold spell descended on California, Oregon and Washington states. Citrus crops in California were damaged and snow fell in the southern parts of the state. This was preceded by long periods of unusually heavy rainstorms and flooding in much of Washington and Oregon.

This pattern of freak weather has emerged throughout the world.

The northern provinces of Thailand were also subjected to an unusually cold spell. Temperatures sunk below 15˚C. An estimated 140,000 people were left without suitable clothing to cope with the weather. It was not the only country to shiver. Bangladesh suffered from an unexpected bleak period, and Russia was afflicted by its coldest winter for 25 years, with temperatures falling to –31˚C. There were more than 30 deaths in the country over three days in January and an unprecedented strain placed on the energy grid as people struggled to keep warm. Animals in a zoo near Moscow, not accustomed to such frigid conditions, were treated accordingly. Monkeys were given wine three times a day to keep off the chill, and a performing lion that was stricken with pneumonia was rubbed all over with brandy.

Meanwhile, on January 18th a huge storm piled in from the Atlantic to batter mainland Europe. At least 47 people were killed as 133mph winds cut into the continent as far as Russia, outing power in hundreds of thousands of homes. Thirty-foot waves scuppered the container vessel *MSC Napoli* off the coast of Britain. Much of its cargo, including cars, motorbikes and wine barrels, was washed up on English beaches attracting hoards of looters. In Germany alone, according to the German Federation of Insurers, around a billion euros' worth of damage was inflicted.

2006 was also a heavy year for China weather-wise. Floods, droughts and typhoons resulted in 2,704 deaths, and economic losses of around $27.5 billion. The country's mainland was hit by seven typhoons and tropical storms, among them Typhoon Saomi, the strongest to strike China since 1949. Eighteen sandstorms whirled through the northern part of the country (the most since 2000), and the south west suffered from the worst drought in a hundred years with severe water shortages affecting 17 million people.

Late in the year, four major typhoons hit the Philippines in as many months, including the first super-typhoon in the country's history. Hundred-plus mile-an-hour winds, flooding and volcanic mudslides claimed hundreds of lives, and caused widespread devastation.

In Malaysia, the frequent occurrence of extreme and unpredictable weather has prompted a government-commissioned report, which announced that 'the weather is undergoing a metamorphosis'. The heaviest rainfall in a century fell over the state of Johor, in the western part of the country, resulting in the area's worst-ever flooding.

During April, guerrilla hailstorms flattened crops in north India. Fifty to 70 per cent of the apple harvest in the state of Himachal Pradesh was destroyed after two storms struck in a week. An hour-long hailstorm in the Punjab left wheat crops mouldering in the fields when the harvesting machinery failed to run on the waterlogged grounds. The monsoon usually starts in June, and although winter rains do occur, it is not often that they strike with such vigour.

Nowhere in the last year has had as many records set as Tasmania. Last year, every month

apart from September was host to the breaking of a rainfall or temperature record. February, April, May and June all featured their lowest minimum monthly temperatures, and June saw the lowest total rainfall recorded. October forged new records for the hottest night, coldest night, hottest day and lowest rainfall.

Returning to mainland Australia, the city of Melbourne endured its coldest Christmas on record. The temperature peaked at 14.5˚C, with summer snow falling on the nearby mountains. Hail and thunderstorms affected the rest of the southern state of Victoria.

To bring it all back home, April has been the warmest in the UK since records began in 1659. There has been unusually low rainfall too, around 36 per cent of the national average for the month. Indeed, 2006 has been scattered with broken records, including the warmest September and autumn in the books, and the hottest month ever – July.

Quite simply, a record number of records have been broken around the world. Whether or not these events are part and parcel of climate change is still disputed by scientists; such drastic consequences of the global climatic shift are not expected so soon.

It is hard to believe, however, in view of the abundance of freak weather worldwide, that the incidents are independent of each other and that such signs of a changing climate are not in fact climate change.

There is a difference between 'weather' and 'climate'. The weather is a consequence of the short-term atmospheric conditions, whereas climate is based on trends and patterns observed over a longer time period. The weather-record phenomenon, though based on the atmosphere's short-term moods, also involves looking to precedents to inform us of what is 'normal' or 'expected'. Although a single broken record is not indicative of a trend, the recent spate of unprecedented events does make a statement. According to the Met Office, 'Climate model predictions indicate that we might expect to see unusual weather occurrences as climate change begins to take effect.' But climate science moves slowly, and can be rather a blunt tool. Models project future scenarios based on what is happening now, and what has happened before, but are unable to anticipate more radical climatic developments until they are upon us.

In the absence of another green world for us to inhabit, we had better watch out. E



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Right: Stewart+ Brown's smock dress, £119, at One, 1 Peter Lane, York; Loomstate fishtail T-shirt, £35, at www.urbanoutfitters.co.uk; Howie's floral skirt, £60, www.howies.co.uk; corsage and belt, stylist's own



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My two-year-old son got lost in the backyard last weekend. Scary. The problem wasn't its size: it was the grass, wild and neglected, that had grown to just above my poor tot's forehead.

This is my husband's and my first house with a garden – some green for us and our son – and I wanted it to be perfect. But while I was making grand plans (lush green plants, a vegetable garden, a composter filled with our own compost), the garden took on a life of its own. The time I've spent weighing up the most ecological way to mow a lawn, the best way to make compost, the right things to plant, etc, has actually made it difficult to... well, garden. My knowledge of gardening is getting in the way of me and my green thumb.

Too much information can be debilitating. As more and more gets out there, the old 'local versus organic versus fairtrade versus recycled versus...' debate will only get more and more confusing. My advice? Choose whatever's most important to you – in the long run they all support each other, but don't let indecision lead to inaction. Ideas are there to be put into practice.

I myself am going to stop faffing about on internet gardening sites and just dig in. I know what's most important to me: a handful of seed packets, a few packs of compost, a push mower and my son. He must be out there somewhere.



Matilda Lee, Green Pages Editor

email: greenpages@theecologist.org

June

BY LAURA SEVIER

Hosepipes use 1,000 litres of water per hour. Instead, reuse household water or rainwater for your plants. Wash clothes at low temperatures (90°C uses twice the electricity as at 40°C) and air dry!

Ethical Eats



London Food Link, the sustainable food experts who helped Konstam (see below) to find local producers, have launched Ethical Eats, a network to help London's restaurants become greener. If you're a Londoner in the catering or restaurant business and want to source ethical ingredients, contact Charlotte Jarman on 020 7837 1228 or charlotte@sustainweb.org

5–17 June

TV dinners

Urban Chef is a BBC documentary that follows Oliver Rowe (pictured), owner of restaurant Konstam at the Prince Albert, on his quest to find all his ingredients from within the area covered by the London Underground. (6.30pm, every weekday Monday 5 June – Friday 17 June, BBC TWO).

14 June

National Liftshare Day



There are more than 38 million empty seats on the UK's roads every weekday, yet 50 per cent of commuters say they'd be willing to share a car. A typical car sharer could save around £1,000 and 1 tonne of CO_2 per year by sharing their daily journey. To find out more or to join a car share scheme, visit www.liftshare.org/nlsd.asp

5 June

World Environment Day

What's the number one thing you are doing to help tackle climate change? What one extra thing could you do? What's stopping you? These are the questions that everyone is being challenged to ask themselves on World Environment Day, established by the UN in 1972. For more information visit www.environment-agency.gov.uk/wed

Open Air Theatre *A Midsummer Night's Dream*

The magical, lush green setting of the Open Air Theatre in Regent's Park, London, is the best place to see this tale of warring fairies and mismatched lovers. (30 May–18 Aug) http://openairtheatre.org



Eco exhibition

Andy Goldsworthy has been dubbed 'a truly ecological artist'. 'Movement, change, light, growth and decay are the lifeblood of nature, the energies I try to tap through my work,' he says. His earthy, awe-inspiring sculptures are made from materials such as oak branches, blackthorns, clay mixed with human hair, and cow dung. Visit his biggest exhibition in Britain to date, at the Yorkshire Sculpture Park, West Bretton (until 6 January 2008; www.ysp.co.uk).

Walk, ramble and stroll

Explore a secluded path in a national park – or just a scenic route to the local shop. Britain has a 14,000 mile network of footpaths. The Ramblers Association, as well as being a wealth of information on footpaths, where to find them and where they lead, organise hundreds of guided walks, from short local strolls ending with a pub lunch to bracing hillside treks. Visit www.ramblers.org.uk.



2–23 June

Wildlife Weeks Triple Bill

Nature reserves around the UK are buzzing with activity and special events in June: dragonfly walks, wildflower walks, badger watches, spring bugwatches, seashore safaris, rockpool rambles and even a froggy festival. Visit www.wildlifetrusts.org

Wild flowers of the month

Ivy-leaved Toadflax

A trailing plant with ivy-shaped leaves that can grow up to 60cm long, even on walls and pavements. Each tiny lilac flower looks like a minature snapdragon.

Dog Rose



A wild, scented rose, pale pink or white in colour, appears in clusters of one to three in June hedgerows. Its scarlet rosehips, which appear in autumn, are edible and rich in vitamin C.

Enchanter's Nightshade



Thrives in moist shady woodland. Its minute white flowers and small round hairy fruits grow along thin, spiky stems. In classical mythology, Circe the witch is said to have used it to turn the shipmates of Ulysses into pigs.



16–24 June:

Bike Week

The UK's annual bike fest. More than 1,500 local events, including 'Dr Bike' free bike checks, family rides, charity fundraising rides and Bristol's Biggest Bike Ride on 24 June. Bike2Work, the biggest part of the week, aims to get car-driving commuters to try cycling to work – especially for trips of up to five miles in congested urban areas, where a bike is fast and convenient. Most events are free: all you need is a bike. www.bikeweek.org.uk

Pick of the month

Home-grown charcoal



Now you can buy charcoal that hasn't destroyed a tropical mangrove swamp in its production and been shipped halfway around the world (the UK imports more than 90 per cent of its barbecue charcoal). Bioregional Home Grown Charcoal is made from wood harvested by traditional woodland management, known as coppicing. This allows woodland flowers to flourish and act as food plants for threatened species of butterfly and creates new habitats for woodland birds. UK charcoal also lights faster and burns hotter for longer, so you don't have to wait for hours before the BBQ is ready. www.bioregional.com



3–17 June

London Sustainability Weeks

A fortnight of recycled sculpture shows, organic food fairs, naked cycle rides, pond dipping, community clean-ups and sustainable business seminars, London's greenest festival launches at The Camden Green Fair and Bikefest on 3 June. Get involved at http://lovelondon.london21.org

Other events

8 June World Oceans Day
The Ocean Project: www.theoceanproject.org/wod

9 June Herbal Workshop
Spend the day with medical herbalist Jackie Cooper in Cumbria: www.lowluckensfarm.co.uk

19 June Growing Vines and Making Wines
Learn how to plant an organic vineyard at Seddlescombe in East Sussex: www.soilassociation.org

30 June The Incredible Veggie Show
All about being a veggie, a vegan or reducing your consumption of meat: www.viva.org.uk

Email: laura@theecologist.org with upcoming events for In Season

Tree of the month

Elder

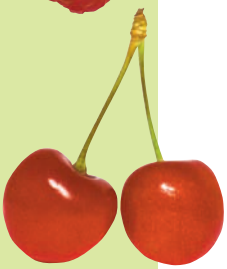
This shrub or small tree behaves a bit like a weed, flourishing in abandoned dwellings and springing up in cracks in concrete paths. Its sweetly scented, tiny white flowers bloom in June and make excellent wine, tea or cordial.



Seasonal food







Fruit
Blackcurrant
Cherry
Elderflower
Loganberry
Raspberry
Redcurrant
Rhubarb
Strawberry
Tomato

Vegetables
Artichoke
Asparagus
Bean
Beetroot
Broccoli
Cabbage
Carrot
Cauliflower
Chard
Courgette
Cucumber
Dandelion
Endive
Fennel
Garlic
Kohlrabi
Lettuce
Mushroom
Onion
Pea (shelled, mangetout, sugar snap)
Potato
Radish
Rocket
Samphire
Shallot
Sorrel
Spinach
Spring green
Spring onion
Turnip
Watercress

For a list of Pick Your Own farms around the country, see www.pickyourown.org/unitedkingdom.htm

LOCAL HERO

Lydia Otter of Pennyhooks Farm

Robert Bullard meets a pioneer of the 'care farming' movement, giving young adults with autism the chance to grow and gain skills from life on a farm







Right: Diary time preps students on the day's activities. **Left and below:** Students ensure that cows have enough hay and grass to feed



Photography DEE RAMADAN

Lydia Otter's career choice and lifetime passion was sparked as a teenager by watching a TV programme about music therapy. 'They played music to an autistic child who was kicking and flapping,' she recounts, 'but out came a rhythm *exactly* the same as mine would have been. "Gosh," I thought, "there's someone in there who is trying to communicate".' Struck by what she'd seen, Lydia decided she would train as a teacher, specialising in autism, and before she knew it she was home-teaching a handful of autistic boys.

This was fine until the boys reached the end of their schooling. Then someone asked Lydia if there was anything they could do on her family's farm, Pennyhooks, outside Swindon. It would only be a trial, she was assured.

Lydia has a preoccupied yet nonchalant air, and her attention darts around, forever concerned for people and animals around her. 'Having been brought up on a farm, I knew there is *always* something that needs doing,' she laughs. 'I can be genuinely thankful to someone who can carry a bucket, and I knew that the boys could do something helpful.'

And it has worked. From a handful of students on a trial basis in 2001, Lydia now provides 50 places of day care for young adults with autism every week. What many might dismiss as unsafe, even dangerous (combining autism with animals), Lydia modestly embraces with a shrug of her broad shoulders. 'To share and to give is the best way to live,' she says.

This care work is an integral part of a 120-acre organic beef farm, and Lydia has developed an accredited course for the students – what she calls 'early work experience, so that they transfer their skills to a farm near them'. She is admired by people from all sides: farmers looking to diversify, parents wanting positive experiences for autistic children, and as a source of inspiration and ideas for people working in social care.

Until recently, few people had heard of 'care farming', in which Lydia and others use farms to promote the physical health and mental wellbeing of people with disabilities, medical or social needs. But interest in green issues, and increasing media attention – especially since the BBC TV documentary series *Growing out of Trouble,* about Monty Don's project to change the habits of drug addicts through work on a farm – has, according to research carried out by the University of Essex, created a movement currently around 50 farms strong, which provide around 3,000 placements per year.

> "I can be genuinely thankful to someone who can carry a bucket, and I knew that the boys could be helpful

'Care Farms offer a way to revitalise the farming community, and they reawaken people's link with farming and the land,' says Kim Jobs, a doctor on the National Care Farming Initiative (NCFI) Steering Group. 'They also offer a more efficient therapeutic facility than traditional social services.'

Around one per cent of the UK population is autistic, but while some adults with autism can function well and live independently, others never develop the skills of daily living. Their





needs are complex; they experience difficulties moving, are hypersensitive to particular senses (frequently noise) and can be obsessed by small details. Not that that deters Lydia. 'If you don't try, you'll never know what they can achieve,' she says.

To explain how people with autism experience the world, she quotes from one of her bibles, *Animals in Translation*. Its author, Temple Grandin, herself autistic, believes that people with autism perceive things similarly to animals, from whom non-autistic people can therefore learn. 'We can't filter stuff out... for us, the world is a swirling mass of tiny details.'

Clockwise from above: A student moves the electric fence to ensure that cows have grass; Lydia with cows; throwing hay; building a therapeutic willow dome and rock garden

Through Lydia's rural background, her own research and her training at a specialist autism unit in Oxford, she has developed her prescription for people with autism: a calm space, routine, purposeful activity, and lots of practice at doing things – something that a farm, with its daily and seasonal rhythms, is ideally placed to provide. The space and freedom of being outdoors, she points out, is the opposite of conventional treatment, where someone troubled is likely to end up in a small and secluded room.

'Everything is beautifully set up here,' says an enthusiastic visiting parent, Charles Draper. 'Lydia's worksheets lay out the tasks that people can do, and they are broken down into manageable things. Only they are *real tasks*, not pretend ones.'

'I have tried to set up a positive model,' says Lydia, 'so that care managers can feel comfortable sending people with autism here, and can see they can achieve something they wouldn't get anywhere else.'

The students have different degrees of Autism Spectrum Disorder. Some can be left to do tasks on their own, with limited supervision; three are leaving, to do NVQs at college; but others have additional characteristics, such as Down's Syndrome or Repetitive Obsessive Behaviour, which make them considerably more demanding. It may take several years to connect with the latter, admits Lydia – 'You can't see these people, but you have to *believe* there is a person inside' – but even they have made great strides at Pennyhooks.

'We have a boy called John, who has profound autism and no speech,' says farm manager Richard Hurford. 'It took him weeks just to get off the bus and come down to the farm. At first we had to ferry him around in a wheelbarrow, but he would not get out. But once he was familiar with the environment he could do things. Now he feeds the animals, and is a great cook and a great gardener.'

Even more importantly, continues Richard, 'As John's skills have increased, he can lead a fuller life, which makes him happier and means that he can grow as a person – it's equipping him for life in our society.'

There have been a host of challenges during Pennyhooks' steady but passionate growth – on top of the everyday one of working with the

students, and learning about them and their behaviour. 'We've had to battle and battle to get funding,' explains Lydia, who has secured funding from social services, schools and colleges, charitable trusts, and the Learning and Skills Council. There are no secrets, she assures me, only repeatedly burning the midnight oil.

But as well as concrete commitment to her cause, chance has played its part. 'What would you like to happen?' asked an admiring visitor in 2001. Lydia replied that what they really needed next was a portacabin classroom – and she got it. That was fine, until her numbers grew. 'We had seven students a day, it was just too small. We either had to stop or to grow.'

The new purpose-built £250,000 unit is some achievement, although Lydia is modest about her role in securing it. It took her some persuading of Defra that the building was eligible for a farm diversification grant, but she dismisses the 18-month long application process as just 'a lot of paperwork', and only remembers her negotiating success as an afterthought: 'They offered me a 30 per cent grant but I said we wouldn't be able to do anything with that, and so they increased it to 40 per cent.'

One of Lydia's biggest successes has been the development of the Countryside Stewardship Course, which she has tailored specifically to her students. It provides structure for the students' visits, shows others what they are capable of, and provides them with a stepping-stone to further qualifications. The Course is accredited by the Open College Network, and has four modules: animal husbandry, conservation, leisure and recreation, and health and safety.

The course was developed over several months. Lydia relied on her 10 years' experience of autism care to design all the material for her different ability students, and to make the worksheets sufficiently clear for the communication difficulties some face.

Lydia admits to the problems of working in care farming. 'I am the first to meet all these battles – financial, health and safety, and others – and so







> Autism is too big a disability for a family or a school to cope with. It's something society needs to share

am constantly having to learn new things, but without any assistance.' As she's one of the movement's success stories, she's also one of the people the NCFI uses to persuade people of its benefits. Not that she has the time – but, whatever anyone asks her to do, she finds it hard to say 'No'.

It's appreciated, though. 'Coming to Pennyhooks is one activity that we can do as a whole family, and have quality time together,' stresses Jane Draper. Her second son, James, is autistic, but it hasn't stopped him and his brothers spending a happy morning planting soft fruit trees at Lydia's farm.

'We'd love to use Pennyhooks more, if only Lydia had more teachers or more space,' says Maria Parsons, a carer with 16 years experience, who visits three days a week. 'I've loved it ever since I first came here; Lydia knows what the students need, the farm is really calming and it provides the students with opportunities for things they are able to do.'

'Autism is too big a disability for a family or a school to cope with,' Lydia concludes, 'it's something that society needs to share.' She wants a commitment to care farms from the government, backed up by financial support to get people started, plus a pool of professional advice and help. 'I need to spend time with the students,' she stresses. I can't be expected to have all the necessary financial and other skills as well.'

Even if her wishes don't come true, Lydia is sure to plough on regardless. Indefatigable to the end, she is on the verge of getting her Pennyhooks approach replicated at a nearby Special Needs School and, through the Soil Association, is trying to recruit other farmers to take on similar students. 'It is perfectly feasible for the idea to be copied elsewhere,' she says emphatically. 'There is land and space, there are jobs to be done, and there is a partially trained workforce – *it's got to work*.' E

Robert Bullard is a freelance journalist

For more info

Pennyhooks Farm, Shrivenham, Wiltshire. Tel: 01793 782436; email pennyhooks.farm@virgin.net

National Care Farm Initiative www.ncfi.org.uk Tel: 01952 815330; email: enquiries@ncfi.org.uk



Acts of seedition

Paul Kingsnorth falls in with a group of transatlantic 'seed swappers' championing rare seed varieties. Treasonable turnips? Shady swede? Gardening has never been so exciting

> "Our locally-specific varieties of food crop should be the pride of the nation. Instead, most of them are banned

A few weeks ago I found myself seated around a table in a former church crypt with a dozen or so keen-looking strangers. It was evening, and the light was fading. The former crypt is now an organic café, and the sympathetic owner had allowed us to colonise a corner of his establishment. Diners wandered in and out, ordering food and looking askance at the small group of oddballs clustered around a glowing laptop and a large cardboard box.

The cardboard box was the real focus of our attention, for it was crammed to the edges with seeds of every imaginable colour, size, shape and variety. Bean seeds, squash seeds, edible flower seeds, carrot seeds, kale seeds, lettuce seeds... whatever you wanted to grow, the chances were that some variant of it was in that box. And the chances were that you'd never seen it before, and might not again.

We had been brought together by two self-confessed 'seed geeks', Andrew Still and Sarah Kleeger, who run a farm in Oregon, in the Pacific Northwest of the USA. Over the years they have become interested – to be frank, they have become obsessed – with old, lesser-known and in some cases extremely rare seed varieties. They have spent years delving into history and coming up with any number of weird and wonderful varieties of food seeds. They have grown them, cross-bred them and tried to turn others on to the amazing variety of seeds out there – a variety that is beyond the wildest dreams of those who choose their veg from the few dozen varieties available in the local garden centre.

Last year, Andrew and Sarah embarked on an ambitious global mission: they would travel the world, meeting equally enthusiastic seed geeks from all continents. They would swap varieties and stories, and spread the word about the importance of preserving heritage seeds. This is how they ended up in my town – and how I ended up with around 20 different varieties of bean, from as far apart as Oregon and Russia, with which I will be experimenting on my allotment this year. I can't wait.

Andrew and Sarah are performing a vital service. Thousands upon thousands of intriguing, tasty, curious and locally-specific varieties of food crop have been created by keen and experimental farmers and gardeners in this country alone over the centuries. They ought to be the pride of the nation: as valued as an Old Master painting or an ancient battlefield. Instead, astonishingly, most of them are banned. You can't sell or buy them. Instead, you are limited to a strict list of government-approved, corporate-owned varieties. Anything else is – well, seedition.

I've written here before about the disgrace that is the National Seed List. When we joined the European Community in the 1970s we were required to create a list of officially 'approved' seed varieties. In theory, this was intended to ensure that all seeds sold were of good quality. In practice, since it costs thousands of pounds to get onto the list and thousands more every year to remain on it, it has meant that only big companies can get their varieties listed. Result: all those amazing

Seeds: Heritage Seed Library from Garden Organic







old heritage seeds, of the type that Andrew and Sarah are so keen on, are illegal. That's right: illegal.

Recently, on BBC Radio, the ever-controversial Prince of Wales weighed in on the same subject, giving it some helpful publicity. 'Hundreds of varieties have been lost,' he said. 'Wonderful things which our forefathers took enormous trouble to develop... What could be crazier than reducing ourselves to far too few varieties and finding, at the end of the day, that maybe they are then more and more subject to disease and complications?'

Quite right, too (although princes ought be careful when they argue against inbreeding). The National Seed List is a disgrace: the worst kind of corporate stitch-up, which militates against history, diversity, culture and the ages of work put in by ordinary folk all over the country to develop place-specific, and often mind-bogglingly odd, varieties of food crops. Old varieties of seed, and the crops they bring forth, should not only be preserved, but promoted. Not just for the perfectly good reason that more crop diversity means more food security, as Prince Charles pointed out (the catastrophic Irish famine of the 1840s was caused by over-dependence not just on one crop – the potato – but on one variety of it) but because these old varieties are part of what makes us what we are, and they tell us about what we were.

If there was any justice in the world, the National Seed List would be abolished tomorrow. There ought to be a campaign against it. And the good news is that, in a way, there is. Not just nationally but – as Andrew and Sarah are showing so well – all over the world. People everywhere, from India to Romania, England to the USA, Ghana to Indonesia, are realising that they need to stand up for crop diversity in the face of the corporate monoculture. They are doing so at local level, below the radar. Meeting up, sharing seeds and stories, furtively swapping varieties like the criminals that, in some cases, the law has made them. There is a seedy revolution brewing, and I am proud to be a footsoldier.

And there are ways of taking part, without risking arrest. By joining the wonderful Heritage Seed Library, the UK's pre-eminent promoter of old varieties, for example. You pay to join them, then they give you a few varieties free every year. Technically they're not selling them, so it's legal. With the same principle in mind, seed-swapping days are springing up all round the country – the 'Seedy Sundays' held in Brighton are said to be the biggest – in which like-minded people get together to swap weird and wonderful crops. I've been to a few of these, and they're great. You never know what you're going to come away with. It's like a lucky dip.

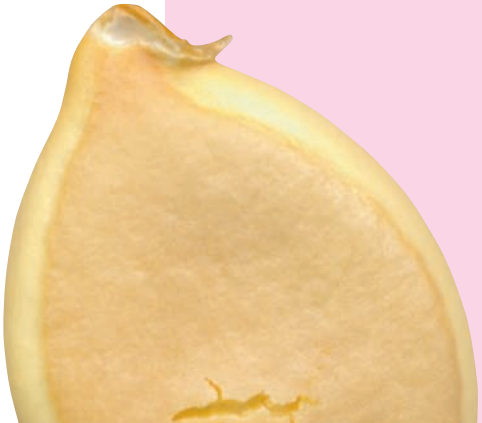
The more people grow their own food – and numbers are rising all the time – the more people will become aware of this seed censorship. And once you're aware, you can never go back. So explore some of the links listed here (see Resources, right), and get your hands on some heritage varieties of your own. Swap them, talk about them – but most of all, plant them. Every seed in your soil is one in the eye for the corporations that want to control your food. Help this revolution succeed. E

> "Every heritage variety of seed in your soil is one in the eye for those who want to control your food



For tips on greening your lawn, see **p 83** of our shopping guide





Resources

- **The Seed Ambassadors Project** Andrew Still and Sarah Kleeger's website, with links, articles, and how to get involved with their effort. www.seedambassadors.org

- **The Heritage Seed Library** This is run by Garden Organic, the working name of the Henry Doubleday Research Association, which for 30 years has been campaigning to save Britain's traditional vegetables. The pictures alone will whet your appetite to grow and eat these amazing varieties. You can even 'adopt' a vegetable to help conservation efforts. www.gardenorganic.org.uk/hsl

- **Seedsaving and Seedsavers' Resources** An excellent website with lots of resources on seed-saving and heritage varieties: http://homepage.tinet.ie/%7Emerlyn/seedsaving.html

- **Plants For A Future** has a great fund of information on old varieties of edible , medicinal and otherwise useful plants – there are 7,300 on its database. www.pfaf.org

CONTACT ME

With questions, comments or anything you think I should know about: growit@paulkingsnorth.net

All my previous columns on allotments and food growing are collected on my website at www.paulkingsnorth.net





Sommelier in a summer

Monty Waldin recalls a crash course in wine education, and here condenses the Italian part to sample with a fine bottle...

The first job offered to school or university leavers wishing to work in the British wine trade is usually that of delivery driver for a high street wine chain. Here you spend your first few months working long, unsocial and poorly paid hours humping crates of bottled water, cola and beer plus the odd bottle of wine, in and out of the delivery van.

If you make it through the first few months you'll almost certainly get promoted. This won't be because of any genius on your part – for example, your perfect record on breakages due to your careful driving and packing – but because staff turnover in these shops is consistently high.

You'll suddenly find yourself given a name badge with the words 'sales assistant' on it. This is the point where the only perk on offer kicks in. If the chain store's area manager thinks you could be one of the few recruits who'll still be around in a couple of years' time, you'll be offered a place (at the company's expense) on one of the Wine & Spirit Education Trust's beginner study courses (which are open to members of the public – see www.wset.co.uk for details).

This is where the fun starts. I vividly remember a two-hour-long class in which we were expected to cover half of Italy, which vies with France as the world's biggest and most hard-to-understand wine-producing country. The second half of Italy was covered the following week, again in two hours.

Confused? You could be

Italy has nearly 500 top wine regions with their own officially controlled denomination, a plethora of lesser-known ones, and around 1,000 different types of grape variety. There are nearly one million hectares (2.5 million acres) of vines and a simply bewildering number of (often) fancifully-designed but hard-to-understand wine labels.

To make things worse, and to get around bureaucratically dense wine labelling laws, some Italian wine producers have purposefully made their front labels small enough to be confused for back labels, and vice versa. This always causes problems for the high street wine shops' newly-badged 'sales assistants', who get charged with the job of restocking the shelves in the Italian wine section before the area manager comes around.

> Go for the everyday Piemontese red wines drunk by the locals, made from grapes such as the delightful Dolcetto and Barbera

Don't despair, however. Italian wine is not incomprehensible. The country's most famous wines come from Piemonte in northern Italy and Tuscany in the middle. Piemonte's most famous and expensive wines, such as the reds Barolo and Barbaresco, are something of an acquired taste as they are made from the unforgivingly tough Nebbiolo grape. So instead, go for the everyday red wines the Piemontese locals drink and which are made from grapes like the delightful Dolcetto and the Barbera (see wine number two, featured right).

Piemonte also makes famous fizz in the form of Asti Spumante, but you're better off moving east into the Veneto (Venice) region for something drier and a bit more sophisticated, made from the Prosecco grape.

From Tuscany, we've all heard of Chianti. The main grape used in Chianti is the Sangiovese, which produces perky red wines, stylistically somewhere between soft Rioja and firm Bordeaux.

Other Tuscan Sangiovese reds

Illustration GRAINNE FINN



Tasting notes

La Schiaccionaia 'Trasubie Sangiovese' 2004, Montecucco, Tuscany

This red wine is made mainly from Tuscany's famous Sangiovese grape. Ageing in new and pre-used oak barrels, plus the addition of a small amount of Merlot, has given it an appealing smoothness. As well as organic vineyards, the estate has olive and chestnut groves, soft fruit and saffron. See www.schiaccionaia.it for details.



Rovero 'Vivace Vigna del Mandorlo Barbera del Monferrato' 2005, Asti, Piemonte

The Rovero family's estate has been certified organic since 1985. This frothy red is made from the underrated Barbera grape, which has briary blackcurrant flavours. The fermentation is stopped prematurely, giving the wine a slight natural fizziness allied to gentle sweetness. It is ideal served as your guests take their places for Sunday lunch. See www.rovero.it for details.

San Martino 'Tito, Terre di Villa Rovere Sangiovese' 2003, Emilia-Romagna

This dry red wine is made from 100 per cent Sangiovese grapes grown in Emilia Romagna, which produces a softer, lighter style than Tuscany. The vineyards have been certified organic since 1996, when Alessandro Annibali, whose family has owned the San Martino estate for generations, teamed up with one of the fathers of Italy's organic movement, Gino Girolomoni.



Il Conventino 'Rosso di Montepulciano' 2004, Montepulciano, Tuscany

This dry red wine is made from 100 per cent Sangiovese grapes grown 75 miles south-east of Florence, at Montepulciano (where it is called *Prugnolo gentile*). Again, a small amount (five months) of wood ageing softens Sangiovese's crisp texture, although because the soils here are sandy, the Sangiovese is notably soft for Tuscany. Too much ageing in barrel would render the wine overly soft. This wine has a nice balance between vanilla flavours from oak ageing, and Sangiovese's briary, bramble-flavoured fruit.



include the pricy and sometimes tough-as-old-boots Brunello di Montalcino, or the better value and more approachable Rosso di Montepulciano (see wine number four, featured left).

Look too for Sangiovese red wines from the emerging Montecucco region (see wine number one, featured right), which is next door to but much cheaper than the more famous Brunello di Montalcino region.

As one of Italy's most widely planted grapes, Sangiovese crops up almost everywhere, and some of the most approachable versions of Sangiovese come from the soft, sandy soils of the Po Valley in Emilia Romagna (see wine number three, featured right).

Moreover, Italy has more organic vineyards than any country in the world – thanks in part to the stubborn refusal of growers in many parts of Italy to industrialise their agriculture.

Italian vineyards tend to be perfect for organics as they are often polycultural – a mix of olives, nuts, fruits, vegetables and cereals for animals.

Organic growing is much easier to implement if vineyards are part of a mixed cropping system. That's because mixed crops are one way to limit the threat from pests and diseases, which thrive when there is only a single – or monocultural – crop to attack.

Italy also has a huge diversity of grape varieties that no other country has – Sangiovese, Canaiolo, Ciliegiolo, Prosecco, Dolcetto, and Primitivo (OK, Primitivo originated in Croatia as Crljenak and was adopted as Zinfandel by the Californians) – all of which feature in this *Ecologist* wine offer.

Hence Italy is a great choice if you have become an ABC wine drinker – ABC standing for 'anything but Chardonnay' in the case of white wine, and 'anything but Cabernet Sauvignon' in the case of reds.

Thus although Italian wine may be complicated to study, its diversity and the country's wealth of organic vineyards make it unique. E

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- Excellent value

Wine club case 8:

See left for full tasting notes

1 La Schiaccionaia 'Trasubie' Sangiovese 2004, Tuscany
2 Rovero 'Barbera del Monferrato' 2005 Asti, Piemonte (x2)
3 San Martino 'Tito, Terre di Villa Rovere Sangiovese' 2003
4 Il Conventino 'Rosso di Montepulciano' 2004, Tuscany
(Tasting notes in July/August issue)
5 Pacina 'Chianti Colli Senesi' 2003 Siena, Tuscany
6 Tomas & Giesen 'Shabaka', Primitivo di Puglia IGT Rosso 2004
7 Tonon, Villa Teresa, Prosecco del Veneto (x3)
8 Gagliasso, 'Ciabot Rus, Dolcetto d'Alba DOC' 2004 Piemonte (x2)

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Styling **Natalie Chesterman**
Art Direction **Sam Franks**
Fashion Direction **Matilda Lee**
Model **Natalia Burlakowa**
Hair & Make-up **Salina Thind** @ **Fletcher's** using **Liz Earle** & **Aveda**
Botanical prints: **Finbar MacDonnell**

Wildflowers

Delicate, sensuous, natural. The beauty of treading lightly



Left: Howie's blossom dress, £55, at www.howies.co.uk; Wildlife Works silk panel skirt, £95, at www.wildlifeworks.co.uk; Katharine Hamnett cardigan, £140, at www.katharinehamnett.com; corsage, stylist's own



Left: From Somewhere cotton shirt dress, £180, see www.fromsomewhere.co.uk for stockists; Beyond Retro slip at www.beyondretro.com; Vintage Clark's shoes and corsage, stylist's own.
Right: Richard Nicoll dress for People Tree, £95, at www.peopletree.co.uk and www.equaclothing.com; From Somewhere bell skirt, £150; vintage silk scarf, stylist's own



Left: Thakoon dress for People Tree, £95, available at www.peopletree.co.uk; selection of Enamore corsages, £18–£21, at www.enamore.co.uk
Right: Enamore pansy sundress, £120, and ribbon tie bolero, £60; Terra Plana grass pistachio shoes, £80, at www.terraplana.com; belt and brooch, stylist's own



Slow fashion

Fast fashion is about greed. **Kate Fletcher** says it's time to slow down and consider the true cost of choosing quantity over quality

Fast speed in fashion is a defining characteristic of today's textile and clothing industry. It's fast in production – tracking sales with electronic tills and just-in-time manufacturing, which can now turn a sample or design sketch into a finished product in as little as 12 days; and fast in consumption – a recent report revealed that people are buying one third more garments than four years ago, fuelled by the rise and rise of supermarkets and 'value' retailers like Primark and Matalan.

Yet the fabric in super-cheap, 'value' or fast fashion is no quicker to make or use than any other garment. The fibre takes the same length of time to grow, regardless of a product's speed to market (in the case of cotton, around a year). It takes just as long to be spun, knitted or woven, cleaned, bleached, dyed, printed, cut and sewn; and going shopping and laundering the garment takes the same amount of time no matter how speedily a design makes it from catwalk to high street retailer.

Fast fashion isn't really about speed, but greed: selling more, making more money. Time is just one factor of production, along with labour, capital and natural resources that get juggled and squeezed in the pursuit of maximum profits. But fast is not free. Short lead times and cheap clothes are only made possible by exploitation of labour and natural resources.

Yet it doesn't have to be this way. We can design a different system for ourselves that makes money while respecting the rights of workers and the environment, and produces beautiful and conscientious garments.

Slow fashion is about designing, producing, consuming and living better. Slow fashion is not time-based but quality-based (which has some time components). Slow is not the opposite of fast – there is no dualism – but a different approach in which designers, buyers, retailers and consumers are more aware of the impacts of products on workers, communities and ecosystems.

The concept of slow fashion borrows heavily from the Slow Food Movement. Founded by Carlo Petrini in Italy in 1986, Slow Food links pleasure and food with awareness and responsibility. It defends biodiversity in our food supply by opposing the standardisation of taste, defends the need for consumer information and protects cultural identities tied to food. It has spawned a wealth of other slow movements. Slow Cities, for example, design with slow values but within the context of a town or city and a commitment to improve its citizens' quality of life.

In melding the ideas of the slow movement with the global clothing industry, we build a new vision for fashion in the era of sustainability: where pleasure and fashion is linked with awareness and responsibility.

Slow fashion is about choice, information, cultural diversity and identity. Yet, critically, it is also about balance. It requires a combination of rapid imaginative change and symbolic (fashion) expression as well as durability and long-term engaging, quality products. Slow fashion supports our psychological needs (to form identity, communicate and be creative through our clothes) as well as our physical needs (to cover and protect us from extremes of climate).

Fast fashion, as it exists today, strikes no such balance. Indeed, it is largely disconnected from reality, with little recognition of poverty wages, forced overtime and climate change.

Slow fashion, with the shift from quantity to quality, takes the pressure off time. It allows suppliers to plan orders, predict the numbers of workers needed and invest in the longer term. It gives companies time to build mutually beneficial relationships. No longer will suppliers have to employ temporary or subcontracted workers, or force workers to do excessive overtime to meet unpredictable orders with impossible deadlines. Instead, workers will have secure employment with regular hours and the opportunity for promotion.

> "Slow is a different approach, a shift from quantity to quality. It links the pleasure of fashion with more awareness and fairer treatment of workers and planet

Of course, quality costs more. We will buy fewer products, but higher in value. A fairer distribution of the ticket price through the supply chain is an intrinsic part of the agenda. Jobs are preserved as workers spend longer on each piece. Slow design enables a richer interaction between designer and maker; maker and garment; garment and user. A strong bond of relationships is formed, which permeates far beyond the garment manufacturing chain.

Slow fashion is a glimpse of a different – and more sustainable – future for the textile and clothing sector and an opportunity for business to be done in a way that respects workers, environment and consumers in equal measure. Such a future is but a garment away. E

Kate Fletcher is an eco textiles consultant and author.
www.katefletcher.com

Tips to slow down your wardrobe:

- Repair your clothes with a smile (it's easier than going shopping)
- Or ask stores about repair services... that may get them thinking
- Ask your friends for new ideas about how to wear the garments you already have... it's always good to wear things in a new way.



Power Houses

As of June 1st, all homes on the market will be given energy performance certificates. So, asks **Laura Sevier**, does this mean more purchasing power or just pointless paperwork?

Energy inspector Neil Darlington doesn't enjoy giving 'F' ratings. But the three-storey, Victorian terraced house with a cellar and single glazing he saw in North Wales wasn't the first, nor will it be the last, energy-guzzling house he'd come across. 'I've been shocked. Sure, these houses are built to withstand the elements, but they're not very energy-efficient,' he says. 'An energy-inefficient house is defective – it's just like having a leaking roof.'

As of June 1st, every home put on the market in England and Wales will have to have an energy efficiency rating, which will be made available to estate agents and buyers. Along with the leasehold information, legal documents and searches, these new Energy Performance Certificates (EPCs) will be included in each Home Information Pack (HIP).

By 2009, all the buildings in the UK that are constructed, sold or rented out will have an EPC. 'People should be entitled to this kind of information,' says housing minister Yvette Cooper. 'You can get this on fridges and washing machines, so why not on a home, where the emissions – and the savings – are so much greater?'



For the *Ecologist* energy campaign and resources, see **p 84** of our shopping guide

In the UK, homes are responsible for 27 per cent of our carbon emissions. Our houses use three times more energy than our cars, yet much of this energy is wasted through poor insulation and inefficient heating systems. That's £7.5 billion of energy wasted in the UK every year, or enough to give every man, woman and child £125 annually. On top of this are rising fuel costs: home gas bills have nearly doubled in four years.

Peter Ambrose of HIPs provider The Partnership Ltd had a trial energy assessment done on his own house in Surrey. The EPC said that he could save up to £900 in fuel bills. 'I'm now in the process of changing my boiler,' says Ambrose – which, according to the EPC, will save him around £210 a year. 'The certificate is certainly useful as a means of identifying what needs to be fixed – and how much it will cost you and how much it will save,' he says.

So how does it work?

The process is fairly simple. The certificate is commissioned by the seller (or their agent). First, there's the assessment. An accredited home inspector or domestic energy assessor visits the property, looking for evidence of low-energy bulbs, insulation and double glazing, and other energy-saving devices. They'll look at the roof and the loft, the wall construction and type of windows, the boiler and hot water cylinder, heating controls and electric meter. They'll measure the ceiling height, the depths of the walls, and note the number and uses of the rooms.

The energy survey will take between one and two hours and cost around £100 to £150 (although this figure is

expected to fall as competition heats up). Then all the data gets fed into a special database that will create the Energy Performance Certificate.

What does the EPC tell you?

The certificate will reveal:

I How much energy the house uses per year, how much it will cost to heat and light and how many tonnes of carbon dioxide (CO_2) it emits.

I The house will be given a rating, from A (very efficient) to G (very inefficient) on energy efficiency (fuel costs) and environmental impact (emissions). These overall ratings are based on the performance of the walls, roof, floor, windows, heating, heating controls, hot water and lighting, which are rated individually ('performance' = energy use per square metre of floor area).

I It includes a list of recommended measures that will lower the fuel costs (for example, 'Fully fill main cavity with blown fibre. Typical savings £210 per year'), and the potential rating of the house if you install all the recommended measures.

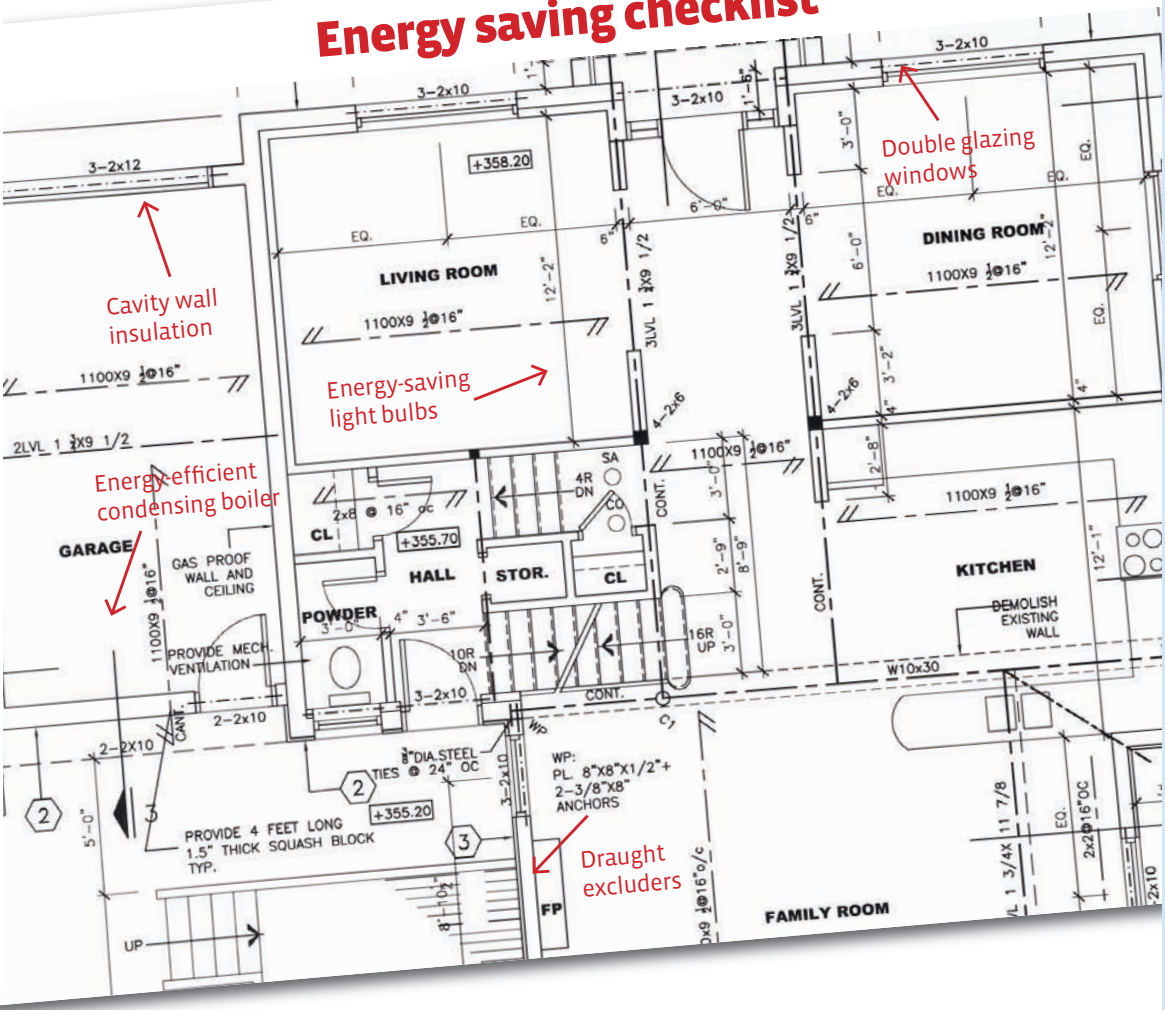
Will it affect the housing market?

Will good energy ratings boost a house's asking price? Peter Bolton King, chief executive of National Association of Estate Agents, says: 'If there are a number of houses up for sale on the same estate at roughly the same price, someone could say that "this property costs less to run per year". Whether that may be a reason someone might buy, or whether it could boost the asking price – it's too early to tell. It's possible.'

But by indicating how much a property costs to heat and light and how to improve it, the EPC could be a godsend for buyers. How else are you going to know if your house-to-be is an energy guzzler? A house that consumes around £1,000 worth of energy per year, compared to one that costs £500 to heat and light per year, may not seem much more expensive at first – but over 10 years, that adds up to £5,000. Knowing how much you'll be spending on energy is a tremendous insight. E

> By showing how much a property costs to heat and light per year, the certificate could be a godsend to buyers

Energy saving checklist



Top six home energy tips

According to the Energy Saving Trust, the average UK household spends more than £870 per year on fuel and power, and produces around six tonnes of CO_2. £300 of this cost (and around two tonnes of CO_2) could be saved by being more energy efficient.

1. Lofts and walls

UK homes lose enough heat through roofs and walls to heat around three million homes a year. Nearly 50 per cent of all domestic heat escapes this way. **Loft insulation** can save around a third of your heating costs. **Cavity wall insulation** reduces heat loss by 60 per cent and saves from £130 to £160 a year.

2. Draughts

Twenty per cent of heat loss is via ventilation and draughts, so invest in **draught excluders** around doors and windows.

3. The boiler

Sixty per cent of domestic CO_2 emissions come from old boilers. An **energy-efficient condensing boiler** can cut heating bills by a third. Combined with **upgraded heating controls**, it could save up to 40 per cent. **Insulate your hot water cylinder** – and you'll cut wastage by three-quarters.

5. Windows

A fifth of all heat loss can be through single glazing and poorly insulated window frames. **Double glazing** can halve heat loss and save £80 to £100 a year.

6. Light bulbs

Normal light bulbs use up to four times more electricity than energy-saving bulbs. An **energy-saving bulb** can save you up to £100 over the bulb's lifetime.

For more information

The Energy Saving Trust (EST) www.est.org.uk

Centre for Alternative Technology www.cat.org.uk

Home Information Pack www.homeinformationpacks.gov.uk



How to be healthy
Insomnia

Sleep deprivation is a worse malaise than most people realise. **Pat Thomas** explains some of its causes, effects and remedies

In our 'open all hours' culture, it's easy to trivialise the role of sleep in staying healthy. While some people may appear to thrive on a few hours of sleep a night, most of us need the standard seven or eight hours' worth to stay healthy. And yet many of us – around 30 per cent of adults – find it hard to get to sleep even when we are tired.

The usual symptoms of insomnia are familiar: difficulty in falling asleep, waking up frequently during the night and then finding it difficult to return to sleep, or waking up 'too early' in the morning. But whilst most of us would define insomnia by the number of hours of sleep 'lost' in a night, in fact it can also defined by the quality of the sleep we normally get. If you sleep throughout the night but still wake unrefreshed, you may likewise be suffering from insomnia.

Insomnia can affect people of all ages, although it is more likely among the over-60s, women in general and postmenopausal women in particular. There are three different grades of insomnia. Those who suffer bouts of insomnia that last from only one night up to several weeks, have what is called 'transient insomnia'. If your sleep patterns are disturbed only from time to time, you have 'intermittent insomnia'. However, if your insomnia occurs on most nights and lasts a month or more, you are suffering from 'chronic insomnia'.

Sleep debt dangers

Left untreated, insomnia not only causes health problems; it can be a signal of a body that is breaking down. For example, chronic insomnia can herald the onset of a serious illness, such as ischaemic heart disease, which is twice as prevalent in poor sleepers. An insomniac is also three times more likely to develop frequent debilitating headaches. Other conditions it may presage include arthritis, kidney disease, heart failure, asthma, Parkinson's disease and hyperthyroidism.



See **p 77–79** for listings of healthy food and drink companies

For the first time, scientists are now looking seriously at what happens to our bodies when we live on just a few hours of sleep a night, and the health implications are shocking.

Research conducted at the University of Chicago in 1999 and published in *The Lancet*, found that after four hours' sleep for six consecutive nights, healthy young men had blood test results that nearly matched those of diabetics. Their ability to process blood sugar was reduced by 30 per cent, they had a huge drop in their insulin response, and they had elevated levels of a stress hormone called cortisol, which can lead to hypertension and



Illustration CAMERON LAW

memory impairment. More recent data suggests that an inexpensive and effective way to improve the health of people with type 2 diabetes might be to improve the duration and quality of their sleep.

Other hormones are also disrupted by lack of sleep. The normal daily rhythm of intense sunlight alternating with nights of near-total darkness has dominated the planet for many thousands of years. The artificial light that bombards city dwellers in particular can drastically alter this cycle.



The attempt to erase the night or at least confine it to small, artificially-confined windows may come with a price. It can, at a minimum, lead to a chronic lack of sleep, diminishing the effectiveness of the body's immune system. But studies also show that it can also disrupt levels of a hormone called melatonin, the knock-on effect of which can be an increased risk of certain cancers, for instance breast cancer.

Other evidence shows that sleep debt also lessens the entire brain's ability to function – most significantly impairing the areas of the brain responsible for attention, complex planning, complex mental operations, and judgment. Worse, once you have acquired a sleep debt it can be hard to make it up again. Evidence suggests that even after four straight nights of uninterrupted quality sleep, deprived people are still slower and more prone to errors than those who had not lost any sleep.

> Sleep debt lessens the brain's ability to function, impairing the areas governing attention, complex mental operations and judgment

Popping pills

Surveys show that less than half of insomniacs ever go to their doctors for help. Their reluctance may have a solid foundation. Medical training devotes limited time and attention to the problem of insomnia, which may explain why the advice and treatment offered often seems so limited.

If your insomnia is transient or intermittent, it is unlikely that your doctor will prescribe anything to help. Instead, he or she may trawl out the usual advice such as taking a warm bath before bed, reading a book (provided it is boring), listening to calming music and drinking a cup of camomile tea. You may be advised not to do any exercise up to four hours before going to bed, not to eat a heavy meal just before bedtime, and to avoid caffeine and alcohol in the evening. Some may suggest techniques like muscle-by-muscle relaxation or meditation.

For chronic insomnia, you may be given a tranquilliser such as benzodiazepine, or an antidepressant, if your doctor suspects that depression may be the main cause of your sleeplessness. Benzodiazepines are the most commonly prescribed drugs for insomnia, but even our normally prescription-happy doctors generally do not like to prescribe a course lasting longer than four weeks. Most know that insomnia is a symptom rather than a disease, that pills can only work for a short time and that they can become addictive.

In truth, most cases of chronic insomnia that reach the doctors' offices are never properly diagnosed. This is because chronic insomnia is often the result of a combination of factors, including underlying physical or mental disorders, such as depression.

Some prescription drugs can also cause insomnia – a frequent problem with elderly people. Less severe types of insomnia may be easier to tackle (see box, right). But whatever type of insomnia you have, solving it will require a commitment to investigating, in a more detailed way, what in your lifestyle may be causing the problem.

Try these first

If you regularly have trouble sleeping, try these approaches:

Keep it dark The bedroom should be dark, and the room at a comfortable temperature – around 18–21°C (65–70°F).

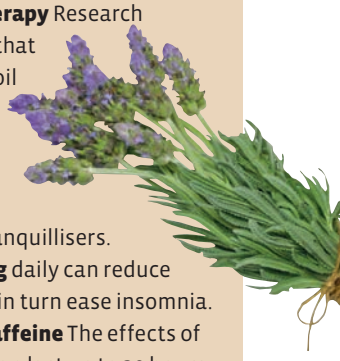
Stay regular Develop a routine where you go to bed and get up at the same time and use the bed only for sex and sleeping.

Food allergies or intolerance can cause insomnia, especially in children. Studies show a six-hour delay between eating the offending food and feeling wide awake – probably due to an outpouring of hormones that interfere with sleep.

Nutrients Deficiencies in calcium, magnesium or B vitamins can cause insomnia. If you have a blood sugar problem, chromium may be effective in helping you sleep.

Herbal remedies – such as valerian, passiflora, St John's wort , camomile, hops and catnip – have fewer adverse effects than prescription drugs.

Aromatherapy Research suggests that lavender oil sprinkled on your pillow works as well as tranquillisers.



Exercising daily can reduce stress, so in turn ease insomnia.

Cut the caffeine The effects of caffeine can last up to 20 hours, so it will disturb some people's sleep patterns even when their last cup was in the morning.

Low blood sugar can lead to sleeplessness. To prevent this, eat a high-carbohydrate food (e.g. bread, wholegrain crackers or a banana) before bedtime.

Deal with stress through counselling and techniques such as yoga and meditation.

Quit smoking Studies show that smokers are more likely to suffer from insomnia.

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FRUIT & VEGETABLES

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The Organic Smokehouse
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Deverill Trout Farm
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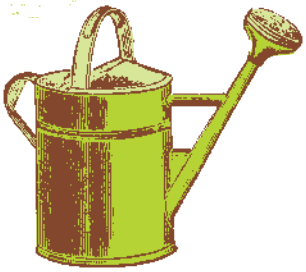


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* Reference articles on a range of selected topics

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Green Fibres
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Liv
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Arbor Vetum
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Ecotopia
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Ecover
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Greenlands
www.greenlands-env.co.uk
Natural Collection
www.naturalcollection.com
Vertue
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Tips for a greener lawn

- Avoid all chemicals and try to follow organic methods.
- Cut down on mowing. There are three million people in Britain who together mow up to 270 million miles a year. Litre for litre, most petrol mowers produce far more greenhouse gas than cars. Newer mowers are more energy-efficient but best of all are human powered machines: mechanical push mowers or scythes .
- Grow a lower maintenance, wilder lawn that includes moss, wild flowers and clover (which is good for the grass).
- Beware of over-feeding your lawn. Grass clippings are good because they release nutrients when they rot .

Source: *The New Green Consumer Guide* by Julia Hailes

Energy

No matter where you live, you can switch to Ecotricity for your electricity supply. And we'd encourage you to do so. We can't rely on an energy market that profits from rising energy prices and increasing demand. This is why The Ecologist *and Ecotricity have teamed up to help reduce your energy bills and ease the transition to clean, locally supplied energy*

Eco power campaign

AIM 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 per cent), coal (30 per cent), nuclear (20 per cent), oil (five per cent) – to non-polluting, small-scale energy sources generated as close to users as possible, e.g. wind, hydro, tidal, solar, biofuels, ground source heat, etc.

HOW? Supplying the current (and expected increased) energy demand in the UK, while 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 SWITCH to Ecotricity as our energy supplier
2 REDUCE our energy demand
3 LOCALISE our energy supply... individually, and in our communities.

ECO-POWER CAMPAIGN SWITCH TO ECOTRICITY

No matter where you live, you can switch to Ecotricity for your electricity supply. And we'd encourage you to do so...

Why Ecotricity?

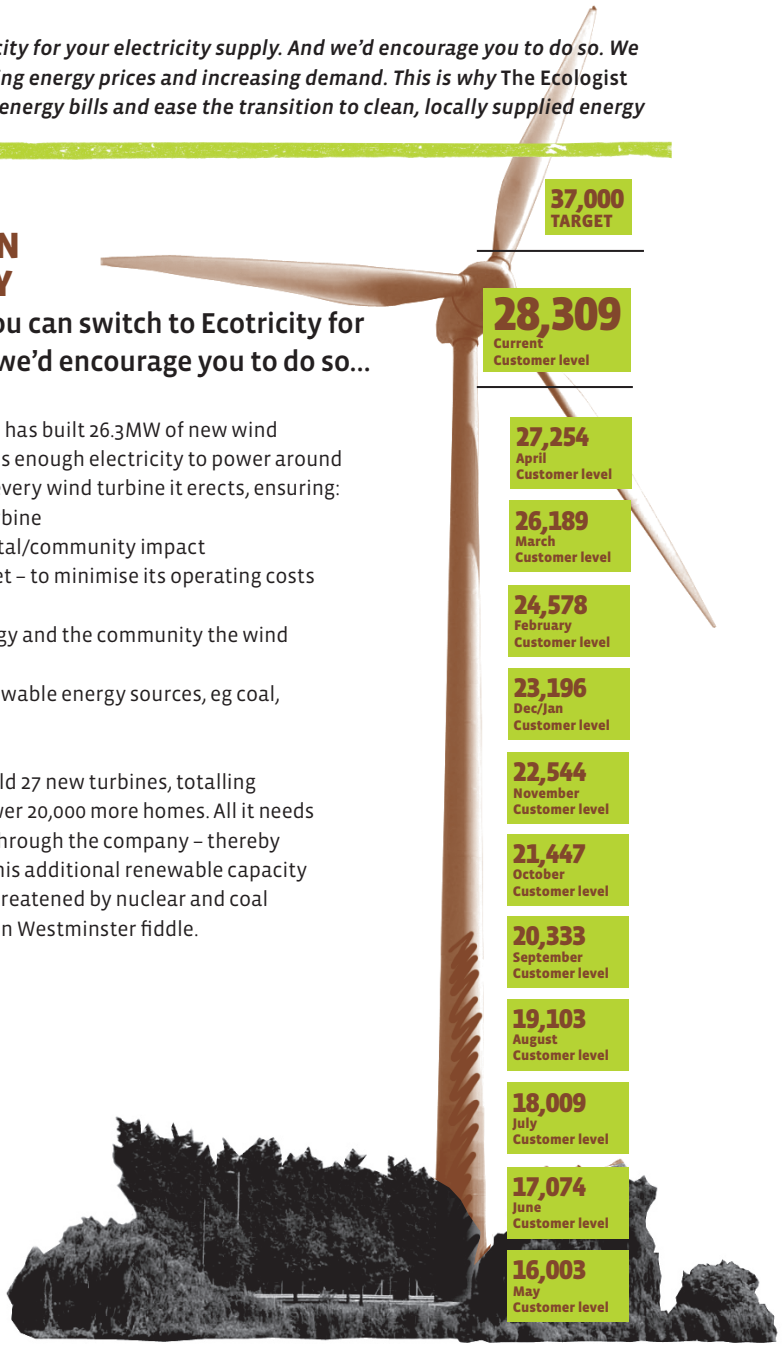
Since it was founded in 1995, Ecotricity has built 26.3MW of new wind turbine capacity, and currently supplies enough electricity to power around 19,000 homes. It retains ownership of every wind turbine it erects, ensuring:

- Total community support for each turbine
- Optimal siting – minimal environmental/community impact
- Best turbine technology on the market – to minimise its operating costs and noise impact
- Long-term commitment to wind energy and the community the wind turbine supplies

Ecotricity refuses to invest in non-renewable energy sources, eg coal, gas or nuclear power.

Why switch now?

For 2007, Ecotricity has approval to build 27 new turbines, totalling 30MW of clean energy – enough to power 20,000 more homes. All it needs is as many of us to buy our electricity through the company – thereby giving it the financial leverage to put this additional renewable capacity in place. Together we can fill the gap threatened by nuclear and coal decommissioning while the grey suits in Westminster fiddle.



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To make the switch, call free on 08000 326 100
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Parenting

The amount of baby gear we buy – such as nappies, wipes, bottles, car seats, pushchairs, clothes, shoes, toys and other nursery items – is staggering. Given the ongoing cost of raising a child and the heavy competition that exists between manufacturers, as consumers we would do well to read and understand labels and buy fewer but better products

Aravore

15% discount off Aravore blankets

READER OFFER

Aravore Babies specialises in beautifully handcrafted organic cotton garments for babies from 0–18 months. Set up by sisters, Norah and Yanina, the company was launched in the UK in October 2005.

All of the cotton used by Aravore is grown by farmers in Paraguay and is also spun locally. Each Aravore Babies garment is hand-loomed, embroidered, crocheted and stitched by craftswomen at the Aravore workshop in Asuncion using traditional knitting methods.

Aravore is working on a new project that aims to increase the amount of organic cotton currently grown in Paraguay by sponsoring a group of small farmers in their transition from conventional to organic agriculture. This includes the establishment of a local farming cooperative as well as setting up a community fund to carry out improvements in health and education in the local area.

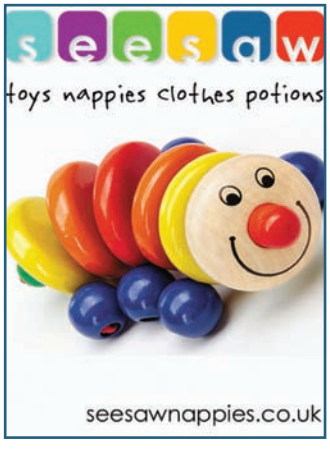
The range is available to view fully at www.aravore-babies.com.



To take advantage of the offer, call 020 8347 5752 and quote 'Ecologist'.

Offer ends 30 June









Clothing

The virtual boutiques and retailers featured on these pages stock a range of well-made, stylish and ethical clothes. Precise sizing charts make it easy to find the right size for you – and if something doesn't fit, or you don't like it, simply return it. Being stylish and being ethical are no longer at odds...

Albatross

Albatross is offering *Ecologist* readers 15 per cent off its new range of soft, stretch jersey organic cotton underwear and PJs.

Eco friendly pyjamas and undies!

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READER OFFER

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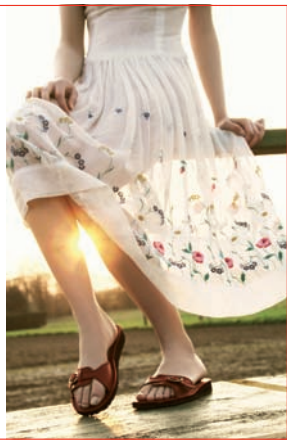
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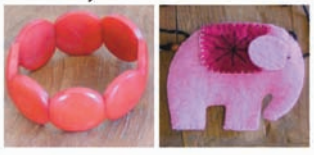


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Bodycare & cosmetics

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Ayurvê

READER OFFER

15% off entire product range



'If you can't eat it, don't put it on the skin,' says Neesha Manan, who set up online ayurvedic store Ayurvê two and half years ago. All its cosmetics and skincare products, made by the Ayurvedic brands Om Veda and Ayurveda Pura, are 100 per cent natural and free from chemicals, additives and preservatives.

Ayurvê's skincare products are inspired by the principles of Ayurveda, the ancient Hindu science of health and medicine. 'In Indian ayurvedic cooking we use certain ingredients for their health properties, like ginger or turmeric. It's the same philosophy for skincare,' says Neesha. 'Turmeric, for example, is a great skin softener, an antiseptic and antibacterial agent. It gives a glow to the skin and combined with other ingredients it's ideal for cellulite and stretch marks.'

With ingredients such as dates, almond oil, honey and cloves, some of the creams, moisturisers, and soaps stocked by Ayurvê certainly sound good enough eat. This is food for the skin indeed.

'*Your first duty is to make the body healthy. Without health, nothing can be achieved... Whatever you want to do, spiritual, social, national, you have to do it with your body. Your thoughts are manifested only through your body...*'

Swami Satchidananda

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Essential Care
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Life Giving Organics
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My Being Well
www.mybeingwell.com
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Pure Nuff Stuff
www.purenuffstuff.co.uk

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Helios Homeopathic Pharmacy
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Optima
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Pure Potions
www.purepotions.co.uk
Revital
www.revital.com
The Organic Health Shop
www.baughdell.co.uk

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Bay House Aromatics
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Cosmetics at Home
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New Directions
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www.aromasciences.com
Ascent
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Doima
www.veganvillage.co.uk/dolma



... and the rest

On these pages you will find products and services that do not fall into our first five classifications, but which are essential to the wellbeing of our planet, and which help you to reduce your carbon footprint. If you think you have something to offer which we have not listed here, please let us know

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Charity Connections
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Charity job
www.charityjob.co.uk
Countryside Jobs Service
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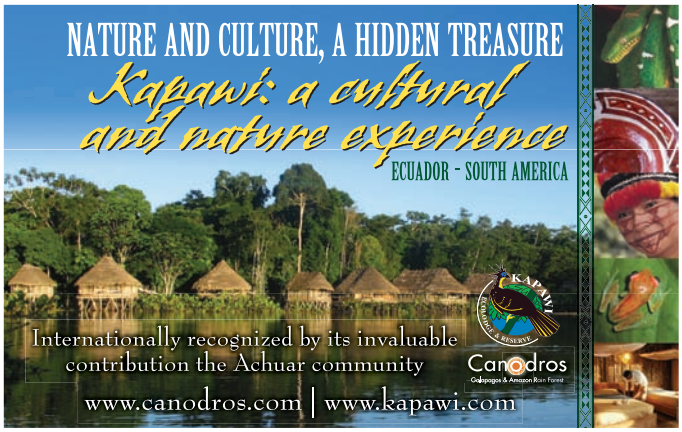
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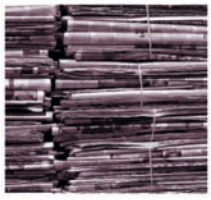
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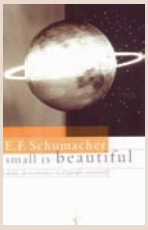
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Small is Beautiful

EF Schumacher (Vintage, £7.99)

Nature, Schumacher said, always knows where to stop, but we haven't learned to distinguish what should be the appropriate scale or size of our activities. Big companies get even bigger through mergers and acquisitions, gargantuan cities overflow with slums taking in hundreds of rural migrants by the day, World Bank and IMF 'cookie cutter' programmes are designed for entire countries, or even regions. Economic policies, designed not with people in mind, instead cater to the god of economic growth. Schumacher calls this the 'universal idolatry of giantism' and it's one of the fatal flaws of modern economic thinking.

Small is Beautiful is a study of economics as if people mattered. Schumacher covers subjects such as communal ownership, purposeful work and sustainability. The style and language of the book is straightforward and instantly appeals. Schumacher has put into words how many of us think: many who, ordinarily, may feel that economics, and all its jargony terms, is out of their league.

The book's immense legacy lives on in the many schools, NGOs, businesses and even countries that have adopted Schumacher's ideas. Even after 30-odd years, there is a lot to live by in this volume.

Matilda Lee

Log onto www.theecologist.org and contribute to the *Ecologist* book club forum. Happy reading!

The nature of chocolate

Ed Hamer finds Allen Young's history of cacao a treat for ecologists, economists and chocolate lovers, alike

Whether you're a chocoholic or a casual consumer, chocolate is undeniably one of the most appealing foods of our time. Both addictive and stimulating and regarded by many as an aphrodisiac, it is no wonder that its Latin christening, *Theobroma*, means 'food of the gods'.

The Chocolate Tree charts the remarkable journey made by cacao out of the rainforest and into the 21st century. As an experienced botanist, Allen Young gives a meticulous account of the origins, domestication and physiology of this tree, whose seeds were once used as currency in early Mesoamerica.

> Cacao represents all that is wrong with the globalisation of agriculture

Today, cacao plantations represent all that is wrong with the globalisation of agriculture. Situated through necessity in the tropics, large-scale cacao producers run highly intensive plantations that exploit the natural resources and cheap labour of developing countries while contributing little to their national economies.

Young, however, sets out a vision of a more holistic model of production based on agro-ecology systems used by cacao's earliest cultivators. He argues convincingly that the key to sustainable cacao production lies in reproducing the tree's natural environment.

As a tree that evolved in the shade of the rainforest understorey, cacao is ideally suited to the agroforestry systems that Young proposes. Plantations could be converted to cacao orchards, surrounded by secondary forest and interspersed with hedgerows of wild vegetation that conserve soil, water and nutrients.

Young believes that the 'Age of Cacao' has once again arrived. With an accessible style and informed reasoning, he describes how a new model of cacao production has the potential to inspire a whole new generation of ecological plantations in the tropics.

In a region of the world where our tropical forests are fast disappearing, the introduction of conservation agriculture such as this is a welcome development. *The Chocolate Tree* is a treasury for chocolate academics, ecologists and chocolate lovers everywhere.



The Chocolate Tree: A natural history of cacao

Allen M. Young

(University Press of Florida, £16.95)



MUSIC

Seize the Day *The Tide is Turning*

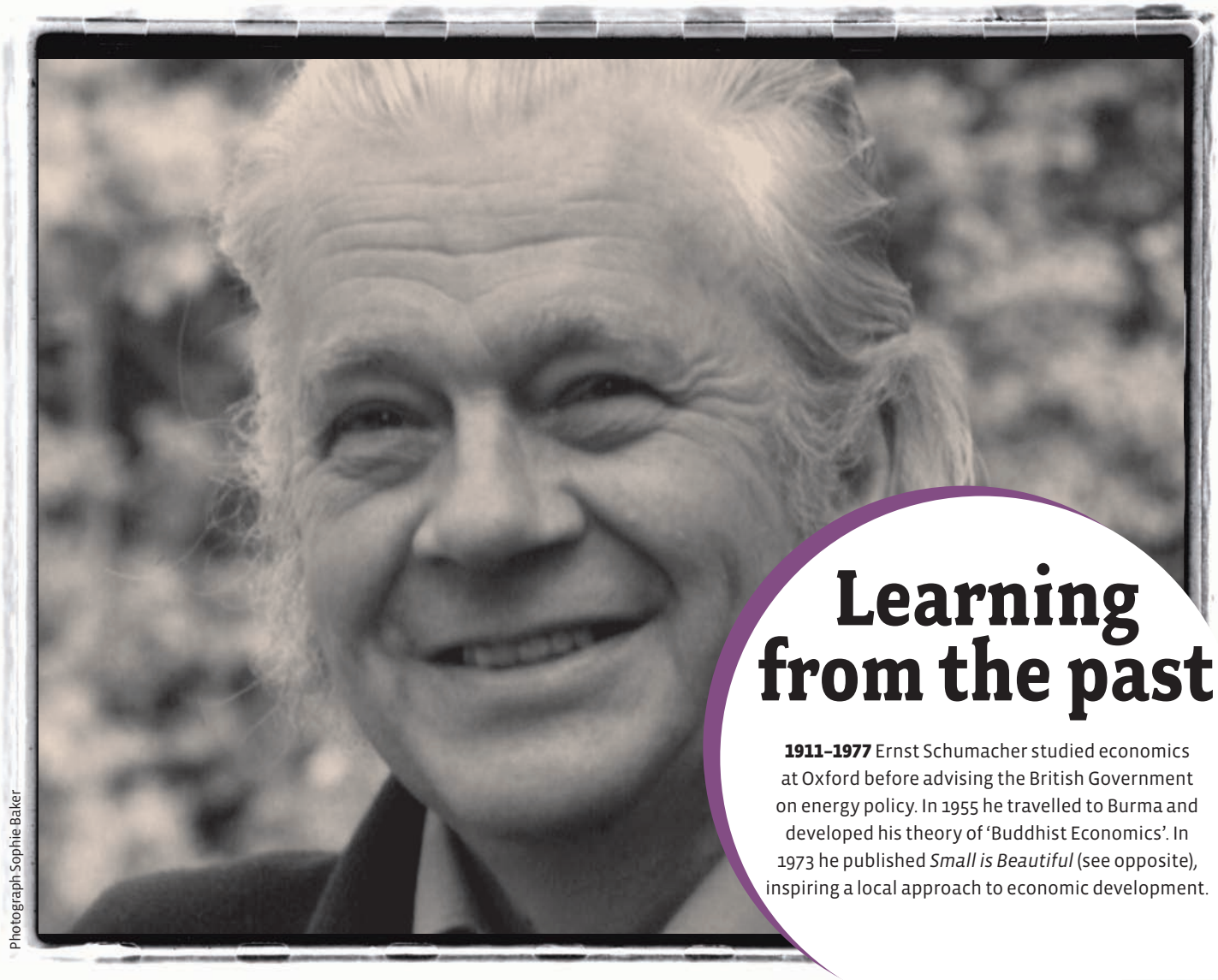
£16 www.seizetheday.org

Seize the Day has been peddling its unique blend of environmental folk roots for more than a decade. Born out of the UK's direct action front lines at Newbury and Twyford Down, the lyrics of founding members Theo Simon and Shannon Smy continue to inspire a generation of environmentalists

Their fourth album *The Tide is Turning* has captured the zeitgeist perfectly. Theo's wit and intelligent rhyme is complimented by Smy's reflective and equally provocative tunes in highlighting issues such as climate change, deep-ecology, Palestine and even a burning Bush.

With musical styles ranging from traditional folk to eastern European and African influences, *The Tide is Turning* passionately describes the spirit of world music – and with it, Seize the Day's place at the heart of the modern ecology movement.

Ed Hamer



Photograph Sophie Baker

Learning from the past

1911–1977 Ernst Schumacher studied economics at Oxford before advising the British Government on energy policy. In 1955 he travelled to Burma and developed his theory of 'Buddhist Economics'. In 1973 he published *Small is Beautiful* (see opposite), inspiring a local approach to economic development.

Digging up the dirt

Charles Dowding convinces **Paul Kingsnorth** of a more productive, yet lazier, way to grow organic fodder

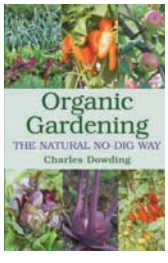
Growing your own food is hugely satisfying, but there's one aspect of it that is universally loathed: the digging. Every autumn, you have to loosen it, dig fertiliser into it and hoe it to get rid of the huge clods that build up. If you don't, you won't be able to grow in it next year. This, anyway, is the received wisdom.

Charles Dowding thinks the received wisdom is wrong, and he can prove it. For more than 25 years he has been running a successful organic garden, supplying restaurants and shops with high-quality veg; so high quality, in fact, that his book comes recommended by Raymond Blanc. And in all that time, he's not dug his soil once.

Dowding has spent that time developing a 'no-dig' system of gardening that, he says, not only makes for an easier experience, but produces food of higher quality and is better for the soil. In this book, he lays it out for the benefit of all.

The basic principle is simple: digging is simply not necessary. The arguments for it, in fact, are 'puzzling and contradictory'. Dig to loosen the soil? 'If your soil is really so hard that plant roots cannot penetrate, then something has gone so badly wrong that mere digging will probably be a temporary solution.' Dig to incorporate manure or compost? No need: simply apply a layer of it to the topsoil and 'within a few months it is all gone and the soil is visible again': the worms dig it in for you. Dig to bury weeds? Again, no need: 'Weeding is mostly a great waste of time and stops us doing the fun bits.' Instead, hoe annual weeds before they get too big, and mulch your plants to keep perennial weeds down.

This could save you hours of backbreaking toil. Personally I'm paying it the ultimate compliment, and converting my allotment into a no-dig zone. It feels better already.



Organic Gardening the Natural No-Dig Way
By Charles Dowding
(Green Books, £10.95)

DVD
China Blue

Director: Micha X. Peled
2005; 88 minutes



Sweatshop factory worker Jasmine, 17, dreams of putting a note in the back pocket of a pair of jeans. 'Just wanted you to know who made your jeans – I cut the thread, Orchid put the zipper on and Li Ping sewed them.' This one scene exposes the most striking disconnect between the people who buy clothes and the people who make them. The 'Made in China' label adorns a large part of the West's high-street clothes, but it tells nothing about the millions who labour for our labels and the conditions they work in.

China Blue is a chilling film about how miserable those millions are. To help support her parents, Jasmine leaves her village to join a jeans factory thousands of miles away, and soon finds herself working up to 20-hour days, seven days a week, with one annual vacation, living in a factory dorm where even bare necessities, such as water and food, are docked from her pay. Factory owner Mr Lam is a slave driver but, in the end, is only passing on the pressure he gets from his Western clients.



This is the first documentary to penetrate so completely a sweatshop factory and because China maintains tight control over foreign media, cameras and crew, the film was shot clandestinely and arrests and interrogations by the police were frequent. During the rush order, workers used clothes pegs to keep their eyes open so as not to fall asleep on the job. China Blue is indeed an eye-opener.

Matilda Lee



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Killing what we love

Read these beautiful volumes about the sad and imminent extinction of the rhino and tiger, and weep, says **Jon Hughes**

We stand on the precipice of the sixth mass extinction. Harvard biologist Edward O Wilson estimates that by 2100, half of all plants and animals will be extinct. Today, one in four mammals, one in eight birds and one in three amphibians stand on the brink of disappearing. Of course, man's reckless abuse of the environment is to blame for this impending tragedy.

Few books bring home the consequences of our actions



as powerfully as these two: Rhino and Tiger. Both books were conceived, researched, written and published by one woman, Joanna Skipwith. She wrote them with her then nine-year-old son in mind and they are all the more striking for their simplicity.

Through full-page pictures and accompanying text the books celebrate man's centuries-old – and in the case of rhino, millennia-old – relationship with these majestic beasts.

For example, *Tiger* opens with a Roman mosaic from the 1st century AD, and *Rhino* with rock carvings from African Bushmen. They progress through the ages, taking in Tigger from *Winnie the Pooh*, Shere Khan from Disney's *Jungle Book*, Eric Carle's *The Rhinoceros*, via Dali, Dürer, Manet and other masters, and include lesser-known but equally striking and impressive works. Each picture is accompanied with a note about the artists, making the books doubly informative.

The overall effect is to celebrate these beasts through tracing our long-standing and enduring love affair with them in a most poetic and elegiac manner. The books are all the more poignant for that, as the last pages depict where these beast once roamed the world and their disappearing habitat and dwindling numbers today.

And they raise perhaps the most critical philosophical question of our time: how can we kill something that we have treasured and loved for so long?

Every house should have copies. If you buy them direct from the charities – www.savetherhino.org and www.21stCenturyTiger.org – 50 per cent of the cover price goes toward helping to save these animals.





Rhino/Tiger
by Joanna Skipwith, Silver Jungle, both £9.99

Last words? Anindilyakwa

Status Extremely Endangered – around 1,000 speakers left.
Habitat Groote Eylandt, an island in the Gulf of Carpentaria, within sight of the northern coast of the Australian mainland.
Description Almost all words in Anindilyakwa end in 'a', giving speech a very particular musicality. Meanwhile, clusters of up to three consonants often occur. It is spoken by Warnindilyakwa aborigines, who have lived in this area as littoral hunter-gatherers for generations.

The highly complex Anindilyakwa grammar is not related to any other Australian language. It is also polysynthetic – that is, you make words cumulatively by sticking units of sense (morphemes) together. So there can be single long words (where English would have a sentence) meaning something such as 'he carried on chasing the shark'. Most words average between five and eight syllables, but up to 14 syllables is not uncommon. An example is 'wirriyikwayiwa' – 'children'. Or this, meaning 'the sea is calm (lying flat)': 'makardanurnamurrkwulinamurra'.

The language has five genders, denoted by different prefixes: human male, non-human male, female, shiny/luminous inanimate object and not-shiny/luminous inanimate object.

The main exports from the Dutch-named Groote Eylandt ('big island') are prawns and manganese – the mining opportunities for this mineral brought 'whitefella' to the island. Previously, Anindilyakwa's relative isolation meant that it escaped language suppression by the Australian government. But younger generations have been drawn to, and invaded by, Western culture and are losing their heritage, both linguistic and otherwise.

How to be free
Pull yourself together

Self-help books exploit the concept that your adult self can tame your childish self. But, says **Tom Hodgkinson**, in reality you're only one person

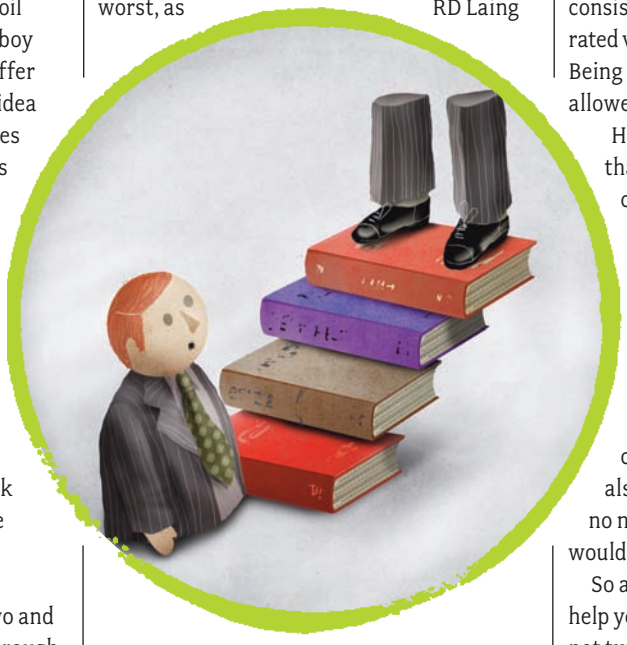
We hear a lot about the search for happiness. In fact, it would not be an exaggeration to say that there is something of a happiness industry. We can point in particular to the piles of patronising and philosophically arid self-help books that aim to make money out of our misery by offering seven, eight or 10 tips and rules that will transform our lives.

Apart from their heinous crime of being badly written, all these books and manuals are as much practical use as the snake oil peddled from the backs of carts in cowboy films. They all – or, let's say, most – suffer from a fundamental error, namely the idea of a divided self. Today we split ourselves into two people. We objectify our selves and one self sees the other self as a project to be worked upon. One sets the rules and the other tries to follow them. One is the boss and one is the slave. 'I'm going to punish myself,' we say. 'I'm going to be really hard on myself.' Or sometimes: 'I'm going to treat myself today.' We divide our selves into a sensible government or boss figure and an unruly child. We seek internally to tame the child and impose the ethics of the adult.

Self-help books tend to exploit this mistake, that the self is divided into two and that one self can force the other self, through the principle of authority, to become happier, work harder, become better at sex or whatever it happens to be. This way of thinking leads to short highs and feelings of success when we achieve a planned result.

But we all know from experience that, as natural lovers of liberty, we tend to resent being bossed around, whether that is by an outside agency or by an internalised authority figure. So the bossed-around self will rebel, and the gains made by the inner boss will be lost. In my case, I find that I will break a resolution a mere matter of hours after I have made it. For example, I will say: 'I have been drinking too much recently. Therefore I am not going to drink at the pub this lunchtime.' Then, as I approach the bar at one o'clock, I will find myself saying, 'A pint of Pride, please,' and enjoying the naughty feeling of having cocked two fingers at my inner Puritan.

As long as we persist in seeing our own self-development as a matter of a contest between master and slave, we will be doomed. At best, we will be locked in inner turmoil. At worst, as RD Laing argued, the divided self will lead to madness.



Happiness as a goal needs to be abandoned. Instead, we can aim for integrity

The answer to freedom is to break out of this prison house of the divided self altogether and to reunite the self. Destroy the hierarchies. Unite the master and slave. Unlock the mind-forg'd manacles. Become an individual – that is, undivided. Single-minded. Eric Gill wrote of the concept of 'integrity', by which he meant not the opposite of 'selling out' but rather becoming one whole person instead of two or more conflicting entities.

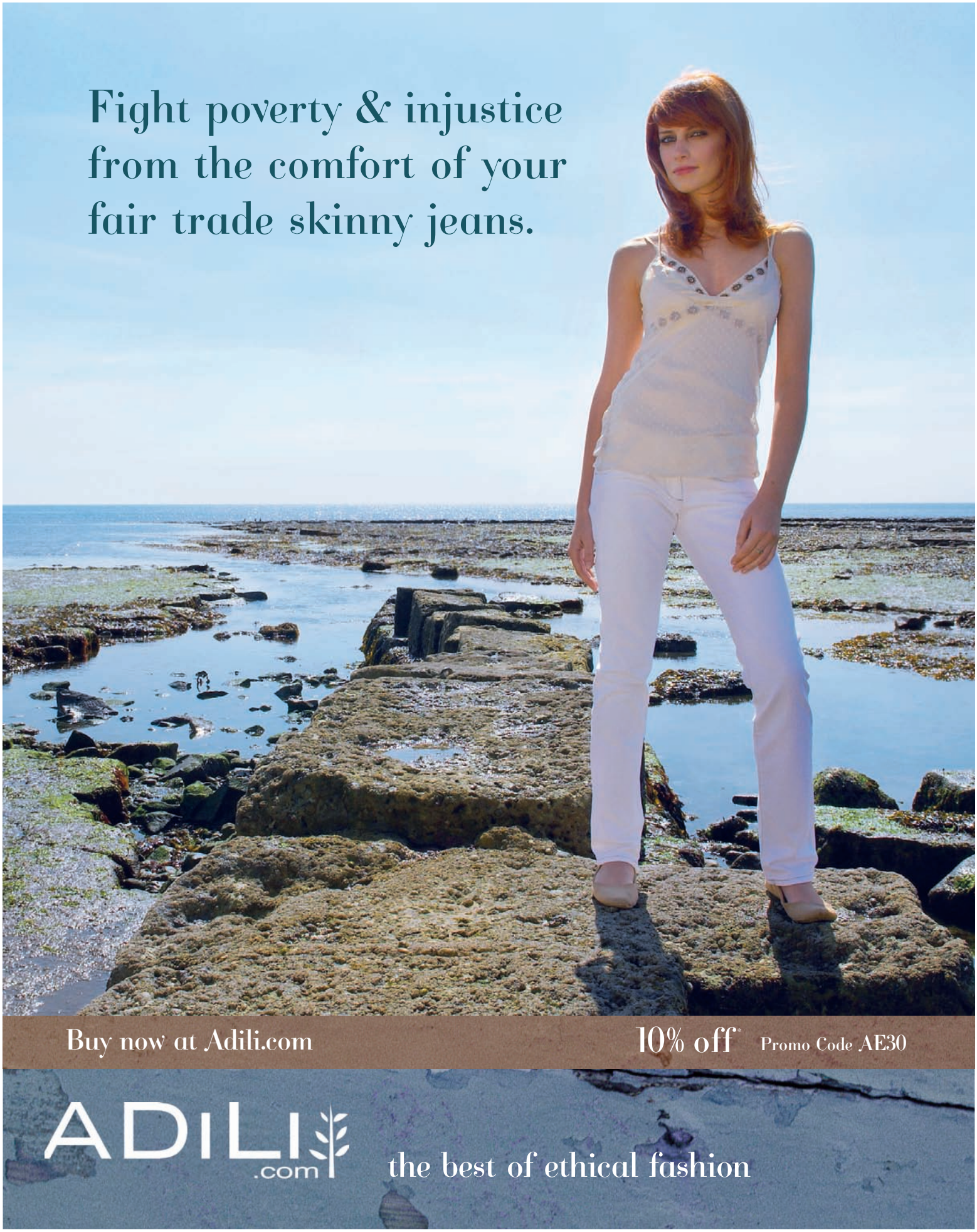
This doesn't necessarily mean a rigid consistency of action. Consistency is an over-rated virtue. Hitler and Stalin were consistent. Being an individual doesn't mean you are not allowed to change your mind.

Having integrity does not mean either that you become a self-indulgent, spoilt child. That would be to indulge the unruly self, whereas I am talking about a unification. The united self can still believe in the possibility of an ethical framework. You can keep your mouth shut during an argument with your partner rather than indulging in a shouting match. That is called self-control and I think it's a good idea. It's also true that the united self would have no need to commit foul deeds because it would have no axe to grind.

So abandon the self-help books. You cannot help your self because you are one person, not two. And happiness as a goal needs to be abandoned. It has become commodified. Instead, we can aim for integrity; we can become one person. There are many enjoyable ways to unite the self. Creative activity is one and being with nature is another. These two are united in the simple act of gardening, thus the simple message of Voltaire's *Candide* is 'cultiver votre jardin'. E

Tom Hodgkinson is Editor of *The Idler* and author of *How to be Free* (Hamish Hamilton, £14.99)

Illustration DAVID HUMPHRIES



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