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the art and science of pure flower and plant essences

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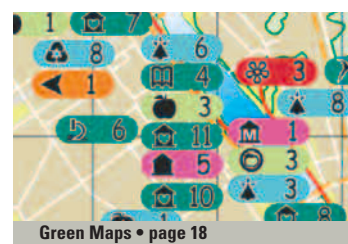
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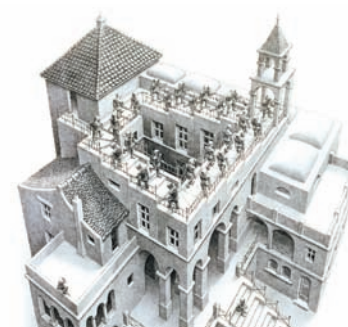
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IN SHOPS 16th August



## Hard to swallow

Two weeks ago it emerged that Mr Blair is backing secret moves to force water companies to fluoridate drinking water, whether the industry likes it or not. In other words, he is proposing to mass medicate the people of this country. This is not – as you might imagine – to prevent some terrible, crushing health risk like smallpox, but to improve the quality of our teeth.

Tooth decay is a nuisance, but it's hardly the stuff of nightmares. Fluoride, on the other hand, may well be; and, according to countless studies around the world, it doesn't even work. In the US, where 65 per cent of the population are routinely subjected to the chemical, the worst tooth decay occurs in poor neighbourhoods of the largest cities – the vast majority of which have been fluoridated for decades. And when fluoridation was stopped in parts of Finland, East Germany, Cuba and Canada tooth decay actually decreased.

But even if it did work, drinking fluoride to prevent cavities is like swallowing bandages to cure a broken arm. To solve tooth decay the government has opted not for a campaign against the undisputed culprits – like fast food and sugar – but for mass medication with a useless medicine.

Fluoride is not just a useless medicine. It is also highly toxic; so toxic, in fact, that in 1984 Procter and Gamble admitted that a small tube of its Colgate toothpaste 'theoretically... contains enough fluoride to kill a small child'. Given the fact that a third of US children living in fluoridated areas have white specks (or, in more serious cases, dark stripes) across their teeth – a sure sign of fluoride over-dose –, the implications are alarming.

Last year the director of the University of Toronto's Preventative Dentistry department, Dr Hardy Limeback, announced that he had profoundly corrected his pro-fluoride position after reviewing the available literature. It must have taken him some time.

Fluoride has been linked to cot death, eczema and Alzheimer's. It has been shown, at low doses, to cause genetic damage. It has even been blamed by doctors from the US's National Cancer Institute and National Health Federation for 35,000 cancer deaths every year.

And because fluoride disintegrates collagen, an essential structural component in skin, muscle, ligaments and bone, big question marks are being raised over its possible contribution to arthritis – a problem that now affects a staggering 70 million Americans.

Other reports are appearing with increasing regularity that link fluoride consumption to increased hip fractures among the elderly.

Still further studies have linked fluoride use to hypothyroidism (underactive thyroid glands), which is one of the most widespread medical problems in the US – affecting more than 20 million people – and leads to fatigue, weight gain, depression and heart disease. The suggestion of such a link is hardly radical; fluoride used to be prescribed by European doctors to depress the activities of an overactive thyroid.

But what is shocking is that fluoride was ever considered for mass medication. It has always been a source of contention. Indeed the first ever lawsuits against the US government's nuclear bomb programme (the so-called Manhattan Project) concerned fluoride, not radiation. What is more, the first health tests for fluoride, conducted by a Dr Dean, were designed to establish how much of the substance industry could afford to release into the environment without damaging human health.

In the summer of 1943 a group of New Jersey farmers reported that something was 'burning up' their peach trees, maiming their horses and cattle and killing their chickens. The source of their ills was a nearby DuPont factory that was producing millions of pounds of fluoride for use in the Manhattan Project. Immediately following the war the farmers filed a suit against DuPont and, without realising it, triggered alarm bells throughout the government. At the time, the Manhattan Project's chief of fluoride toxicology studies, professor Harold C Hodge, asked his superiors if there 'would be any use in making attempts to counteract the local fear of fluoride through lectures on fluoride toxicology and the usefulness of fluoride in tooth health?' As we now know, that is exactly what happened – with the effect that fluoride was magically transformed from a killer to a panacea.

Some years later Dr Phyllis Mullenix, formerly the head of toxicology at Forsyth Dental Center in Boston, conducted animal studies that showed fluoride was a powerful central nervous system toxin – even at low doses. Her results were published, and Mullenix

was startled when the US National Institute of Health rejected her conclusions out of hand and terminated her grant.

Mullenix's research was not as original as she thought, however. Similar studies had been carried out by dentists involved in the Manhattan Project; the results had demonstrated a 'marked central nervous system effect' from fluoride. A version of the study was published in 1948, but, according to the investigative journalists who uncovered the original, it was 'censored to the point of tragicomedy'. While the published version reported that the factory workers studied exhibited fewer cavities, the original reported that most of them no longer exhibited any teeth at all.

Since then, the most widely known study into the benefits of water fluoridation was conducted in New Zealand between 1954 and 1970. The so-called 'Hastings experiment' is still quoted by fluoridation advocates today. But it failed to meet the most basic criteria for scientific objectivity; not least because the

decline in tooth decay that the community in the study experienced was also seen in non-fluoridated communities in the region. The then mayor of Auckland, Sir Dove Myer Robinson, described the Hastings experiment as a 'swindle'.

Tragically the people the British government ostensibly wants to help most – ie, the poor – are the very people who will be worst hit by fluoride contamination. Studies by the

American Dental Association in 1957 and the Canadian National Research Council in 1977 showed that 'people with inadequate dietary intakes are likely to be more "at risk" as a consequence of long-term low-dose fluoride ingestion'.

The British government's public health and water ministers, respectively Hazel Blears and Elliot Morley, recently issued a letter in which they suggested with breathtaking arrogance that 'those who remain adamantly opposed would be able to use water filters that remove fluoride or buy bottled drinking water'. But why should we have to? If people want to subject their children to a highly suspect industrial poison, they are free to do so, on their own terms. That is the position of virtually every country in Europe.





**IRAQ** Thanks to the unchecked looting of hospitals and the destruction of nearly all centres storing public health records in Iraq it is now impossible to document or report symptoms linked to the use of depleted uranium (DU) weapons in the country.

Furthermore, the US Agency for International Development has hired the World Health Organisation – at a cost of \$10m – to identify the Iraqi population's immediate health needs. This raises concerns about a possible conflict of interest. Any data-gathering of immediate health impacts of DU is being paid for by the US, which is the major entity potentially liable for costs relating to those impacts.

Iraqi government sites targeted for looting and burning have included the ministries of planning, information and health. This has fed speculation about a deliberate attempt having been made to destroy crucial data; information from pre-war health records would be critical to establishing whether levels of cancers and birth defects have increased in Iraq since the invasion.

US human rights lawyer Karen Parker, who has argued the illegality of DU at the UN since 1996, states: 'Since the UN first found that DU weaponry violated existing law, the evidence against DU is even stronger. I have always thought that the US fought so hard to maintain the sanctions regime against Iraq in part to cover up the effects of DU. Now the destruction of hospitals and the records compiled by Iraqi scientists on DU further supports a conclusion that the goal of the US is to cover up the truth. As the Red Cross has stated, it is the duty of the US forces to protect hospitals. The absolute failure to do so is a major violation of the Geneva Conventions.'

Sources indicate that US and UK forces used five times as much DU in the recent conflict than in the first Gulf war.

**US** Firms run by board members of the world's wealthiest environmental group have logged forests, paved the way for a luxury housing development on a fragile grassland area and drilled for natural gas on the last breeding ground of one of the world's rarest birds, *The Washington Post* reports.

With assets worth \$3 billion,

the Nature Conservancy has a board that includes executives and directors from oil, chemical, automobile, mining, logging and utility companies. And it also initially concealed the fact that president Steven McCormick received \$420,000 in benefits last year. In addition, the conservancy gave McCormick a \$1.55m loan to buy a house.

**BURMA** Kuoni, Europe's sixth largest travel company, has announced it will stop operating in Burma at the end of the year. The company has been on the Burma Campaign UK's 'dirty list' of firms doing business in the country. The campaign's director, Yvette Mahon, welcomed Kuoni's decision. 'We are delighted Kuoni is pulling out of Burma,' she said. 'Tourism is a vital source of income for the dictatorship. This sends a strong message to other tour operators that they should get out too.'

Meanwhile, the Burma Campaign has slammed British American Tobacco (BAT) for overestimating the value of the poverty wages paid to its Burmese factory workers by 86 per cent. BAT had initially told the campaign that its lowest paid workers could earn a total of £30 per month. The firm later confessed that the actual amount is £16.10 per month.

And in Europe a coalition of organisations in 13 different countries has launched a new campaign to stop Austrian Airlines subsidiary Lauda Air flying to Burma.

For more information, contact Burma Campaign UK, Bickerton House, 25/27 Bickerton Road, London N19 5JT; tel (00 44) (0)20 7281 7377; visit: [www.burmacampaign.org.uk](http://www.burmacampaign.org.uk)



**UK** One of oil giant BP's biggest investment projects is turning into a major financial liability, a new report claims. *Building Tomorrow's Crisis?*, a study by independent financial analyst Claros Consulting, describes BP's flagship Baku-Tbilisi-Ceyhan oil pipeline as 'marginal on financial return, even assuming all goes to plan'. The pipeline would run through Azerbaijan, Georgia and Turkey.

The project came under further pressure in May when environment and human rights groups filed official complaints against it in five countries. The campaigners allege that it breaches the Organisation for Economic Co-operation and Development's guidelines for multinational enterprises. Furthermore, an international fact-finding mission to Turkey found that it breaches international and Turkish law, and that it threatens widespread human rights abuses.

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



**UK** The UK is seeking hundreds of extra scientists to work on its nuclear bomb programme, according to a report in *The New Scientist*. Writing in the May 24 issue, Rob Edwards said: 'The recruitment drive has raised fears that Britain risks being sucked into fresh US research on low-yield nuclear weapons – so-called "mini-nukes" – for use as bunker busters on the battlefield.'

**CZECH REPUBLIC** Protesters have forced the European Bank for Reconstruction and Development to cancel its involvement in a controversial aluminium project in the Czech Republic. Mexican company Nemek is building a new aluminium facility amid the last remaining prime agricultural land in the Czech region of Most. An independent expert assessment of a number of documents relating to the project, including its Environmental Impact Assessment and construction permit, showed the potential toxicity of the sites' wastes and emissions had not been properly assessed.

For more information, visit: [www.bankwatch.org/issues/ebdrip/mainnemak.html](http://www.bankwatch.org/issues/ebdrip/mainnemak.html)

"It's a great sacrifice what I'm doing. I have a sailing boat, but in two years I've only been on it one day. And I haven't been to my house in Bermuda for two or three years. And the same goes for my house in Portofino. I've been there for only one day in the last nine months. It's a question I keep asking myself: "How much longer do I have to keep living this life of sacrifices?"

**Italian prime minister Silvio Berlusconi, May 10, 2003**

"First, let me make it very clear, poor people aren't necessarily killers. Just because you happen to be not rich doesn't mean you're willing to kill."

**George W Bush, May 19, 2003**

"There are many of us working for this company who believe that current management is making a mistake by ignoring or, worse, challenging the science on climate change. It's a public relations mistake, and a market positioning mistake, that other oil companies have been quicker to avoid. Oil isn't going to go away tomorrow. But then, neither is global warming, and we ought to stop pretending it will. I'd prefer to work for a company that took that problem seriously, and did more to look after my children's future."

**Exxon employee**

"You can make an easy kind of a link that if you have a protest group protesting a war where the cause that's being fought against is international terrorism then you might have terrorism at that (protest). You can almost argue that [that] protest is a terrorist act."

**Mike Van Winkle, spokesman for the California Anti-Terrorism Information Center**



**INDIA** Five pilot rainwater harvesting projects in New Delhi have successfully tested a cheap system for collecting monsoon rainwater and directing it underground to over-tapped aquifers. It is estimated that if current rates of water consumption go unchanged, the aquifers, which provide more than 12 per cent of the Indian capital's water supply, could go dry by 2020. City officials have recently begun requiring builders to include rain-collection systems on new homes and other buildings.

**PUERTO RICO** The US Navy bombing tests and military practice on the island of Vieques, Puerto Rico, have ended. On May 1 the people of Vieques celebrated the first day in over 60 years without a US Navy bombing run. Until recently, the US Navy owned over two thirds of the island, having forced many families and farmers out of their homes and off their lands to make way for military exercises, which began in 1947.

**US** Sonar operations conducted for five hours in May by the US Navy near Vancouver Island created one of the worst displays of marine mammal harassment ever seen, according to observers. Whales and porpoises in the region could not escape the intense mid-frequency long duration 'pings' from the sonar; and several porpoises are reported to have 'coincidentally' stranded and died following the event.

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

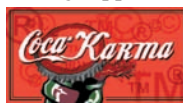
**US** People for the Ethical Treatment of Animals (Peta) has criticised the animal-welfare standards of the world's largest supplier of chicken meals for being completely inadequate. Peta spokesman Bruce Friedrich said KFC's new standards don't deal with the worst abuses of chickens, which include drugging birds, breeding them to grow so quickly they collapse under their own weight and sending them to slaughter while still conscious.

Peta claims that at slaughter, some birds aren't knocked out by

the water-filled electrically-charged stun bath and are still conscious when their throats are slit – and even when they're dumped into tanks of scalding water to remove their feathers.

Meanwhile, KFC and its optimistically titled parent company Yum! Brands, Inc. has asked the US government to review a possible change in how processors slaughter the birds. KFC wants to know if gassing them with blasts of carbon dioxide would be safe for consumers and slaughterhouse workers.

**INDIA** Two rural communities in the southern Indian state of Kerala have accused Coca-Cola and Pepsi of depleting local groundwater and triggering water shortages due to operations at their bottling plants. As a result, one village authority has revoked the water-use permit of a Pepsi plant, and another village has denied a licence renewal to Coke – though the decision was later overturned in court. The villagers' protests are now being supported by Indian national environmental organisations.



**UKRAINE** To mark the 17th anniversary of the Chernobyl tragedy, the Ukrainian security service has posted several KGB documents on its website that show the bureau had informed the USSR's Communist Party leadership of mistakes that had taken place during the plant's construction. In particular, the KGB concluded in 1984 that the third and fourth units of the Chernobyl nuclear plant had serious construction flaws, which had caused cracks in the block domes. Secret reports mention an emergency situation at the plant in 1982 as well.

**AFRICA** Despite rising prices, pesticide use is increasing among smallholder African farmers – in many cases with no crop or income benefit – a new report has found. *The Dependency Syndrome*, a study by Pesticide Action Network UK, reveals that vegetable farmers in Benin are spraying their cabbages 12-20 times a season. This compares with only three sprays 10 years ago. Farmers explained that they spray more often because of higher pest levels and because the pesticides are ineffective. A treadmill of dependency is exacerbated by new crop varieties that offer improved yields but can be more susceptible to pests. Ethiopian farmers who obtained higher yields with improved maize found that these varieties are prone to weevil damage in storage and that this cancelled out yield increases. Buying improved seed and agrochemicals has left farmers in debt, and with no choice but to sell valuable livestock assets.

Food security has been reduced in many areas as a high proportion of farmers' production costs is spent on pesticide application. In Benin the average pesticide costs per hectare for the cotton farmers interviewed have risen by 80 per cent since 2000; income has remained the same. Benin cotton, vegetable and cereal farmers have all reported reduced food security in recent years.

*The Dependency Syndrome* also discovered that pesticide-related livestock poisonings have increased considerably. And farmers have witnessed damage to local wildlife and important soil organisms after Endosulfan has been introduced to cotton-growing areas.

For more information, contact: Pan UK, Eurolink Centre, 49 Effra Road, London SW2 1BZ, UK; tel: +44 (0)20 7274 8895; Fax: +44 (0)20 7274 9084; visit: [www.pan-uk.org](http://www.pan-uk.org)

**UK** The construction firm Jarvis, currently under investigation for its part in the Potters Bar rail crash, has been awarded a £1.9m contract to provide 'support' for 700 under-performing secondary schools. Schools standards minister David Miliband justified Jarvis's appointment by saying: '[Schools regulator] Ofsted has said there is a real problem in the quality of support going to the lowest-performing schools.' The move is part of the government's Private Finance Initiative (PFI), which allows private companies to bid for contracts to run schools and other public services. A January Audit Commission report found the first PFI schools to be 'significantly worse' than other new schools in England and Wales.

Elsewhere, defence and shipping firm Vosper Thornycroft has won a £100m deal to take over the running of Surrey's local education authority (LEA). Vosper's CEO was candid about his company's motives: 'It is £100m over seven years. If we are able to catch some of the other LEAs we could double or treble our size.' Of course, if the General Agreement on Trade in Services (Gats) is completed in Cancun in September, it will not just be UK firms bidding for such contracts.

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

**AUSTRALIA** Rising temperatures could trigger a 164 per cent increase in heat-related deaths in Australia by 2050 and a rise of up to 240 per cent in injuries and deaths caused by flooding by 2020, according to a study commissioned by the Australian government. The Pacific island nations would be even worse affected, says the Australian National University study, with up to 90,000 islanders at risk of flooding each year by the 2050s; that's up from about 5,000 now. Australia has refused to ratify the Kyoto Protocol on climate change.

For more details, see: [www.foe.org](http://www.foe.org)

**WORLD** Factory farms are expanding into 'developing' countries – bringing with them a wealth of environmental and public health concerns, according to a paper by US environmental analyst the Worldwatch Institute. *Factory Farming in the Developing*



**INDONESIA** Malaysia and Singapore are guilty of 'laundering' logs exported illegally from Indonesia for markets in Europe and the US, according to the Environmental Investigation Agency. The agency recorded 32 Indonesian boats carrying illegal logs into the Malaysian port of Muar in just one hour in April. The boats passed by police and customs vessels on their way to unloading the timber. The agency says that the only way to address the problem at the moment is for consumers to boycott all tropical timber products.

*World* notes that global meat production has increased by more than 500 per cent since 1950, and that factory farming is the fastest growing method of animal production. Factory feedlots are responsible for 43 per cent of the world's beef, and the majority of pork and poultry is raised in factory farms. Meat consumption is perceived as a 'measure of social and economic development', the report states, and two thirds of the gains in meat consumption in 2002 were in the developing world. Factory farming threatens the survival of indigenous livestock and contributes to groundwater pollution, food-borne illnesses and antibiotic resistance.

To read the report, visit: [www.worldwatch.org](http://www.worldwatch.org)



**INDIA** An estimated 25,000 children, mostly girls, work an average of 10 to 13 hours a day for Unilever subsidiary Hindustan Lever, according to a new report. *Child Labour and Trans-National Seed Companies in Hybrid Cotton Seed Production in Andhra Pradesh* also claims that around 17,000 children work for Monsanto and its Indian subsidiary Mahyco.

These children get no education, earn less than 20 rupees a day and are exposed to poisonous pesticides like Endosulphan during their work. More than 11,000 children work under similar conditions for the multinationals Syngenta, Advanta and the Bayer offshoot Proagro.

To read the report, visit: [www.indianet.nl/cotseed.html](http://www.indianet.nl/cotseed.html)

**EU** Greenhouse gas emissions in the EU rose for the second year running in 2001, with the European Environment Agency estimating they were 1 per cent higher than in 2000. Under the terms of the Kyoto Protocol the EU is committed to reducing emissions by 8 per cent against 1990 levels between 2008 and 2012. Germany, France and the UK witnessed the EU's biggest rises in emissions.

**UK** Mayor Ken Livingstone is set to oppose the release of GM organisms in the London area. According to Green Party London Assembly member Noel Lynch, Livingstone has included the following statement in London's forthcoming biodiversity strategy: 'The mayor will oppose the commercial or experimental release of genetically modified organisms into the environment in London.' The Greens in the assembly are now lobbying determinedly for the mayor to declare London a GM-free zone.

## Cracking the power problem

**AUSTRALIA** Construction has begun on a biomass co-generation plant in Queensland that will produce renewable energy from 5,000 tons of macadamia nut shells. The plant, powered on shells generated by the country's native macadamia nut industry, will produce enough power for 1,200 homes.

## Traffic fumes lower sperm counts

**ITALY** In a study of 85 toll-booth male attendants on Italian motorways, researchers at the University of Naples found the men had poorer quality sperm than other young and middle-aged Italian workers in the same area.

## Pollution provokes heart problems

**EUROPE** Minor increases in urban air pollution can provoke heart problems, a new study claims. A *European Heart Journal* report of a study of seven European cities and regions (including London, Madrid, Paris and Rome) found that when sulphur dioxide levels rise even slightly, hospital visits for heart problems also increase over the following 48 hours.

## Number of threatened species doubles in Brazil

**BRAZIL** The destruction of natural habitats for industrial operations has caused the number of endangered animal species in Brazil to almost double over the last decade to 398.

## For cod's sake

**CANADA** The Canadian government has banned all commercial and recreational cod fishing in an effort to stave off the absolute collapse of the species.

## Moth falls

**UK** The number of moths in Britain's countryside has declined drastically, research has revealed. Tiger moth populations have decreased by 44 per cent in the past 30 years, there are 72 per cent less lackey moths and 64 per cent less figure-of-eight moths.

For more information, visit: [www.butterfly-conservation.org](http://www.butterfly-conservation.org)

## The condor returns

**US** Biologists in California have counted 222 condors this year – a 10-fold increase from 1982, when there were just 22 left.

## Globalisation makes boycotts tricky

**US** A majority of US consumers would take into account whether a company is from a country that did not support the US invasion of Iraq before buying its products, a recent poll shows. However, the survey by communications consultancy Fleishman-Hillard and market research firm Wirthlin Worldwide found that there was some confusion among those surveyed as to the country of origin of many brands. For example, 64 per cent said US mustard Grey Poupon is French, 78 per cent said Universal Pictures is a US company (it's owned by France's Vivendi), 42 per cent said Saab (originally Swedish, but now owned by General Motors) is German, 55 per cent said the German firm Bayer is American, and 70 per cent said the Dutch beer Heineken is German.

## Disposable society

**US** Walt Disney is to sell DVDs that self-destruct after 48 hours. When the EZ-D plastic packaging is opened and exposed to oxygen the disc plays perfectly for 48 hours until a chemical reaction makes it unreadable and the consumer has to toss it in their rubbish bin.

## Computer blood clot link

**NEW ZEALAND** Sitting at a computer for long stretches of time may increase the risk of deadly blood clots. A report in *The European Respiratory Journal* details the case of a New Zealand man who died from deep-vein thrombosis after spending up to 18 hours a day at his computer.

## Blair shares honours with Michael Bolton

**UK** Prime minister Tony Blair has been awarded the US's Ellis Island Medal of Honour for International Leadership this year. He shouldn't get too carried away. So has frizzy-haired crooner Michael Bolton.

## Curiosity kills the core

**US** A Californian scientist intends to send a probe to the Earth's core – using a nuclear explosion. According to a report in *Nature*, professor David Stevenson wants to use a nuclear blast of 'only a few megatons' to send a grapefruit-sized probe into the earth's core. 'We've spent more than \$10 billion in unmanned missions to the planets,' Stevenson said. 'But we've only been about 10 kilometres into our own planet.'

**EU** The European Commission's proposals for a new EU Chemicals Policy will cause millions of laboratory animals to die in a programme of outdated and unreliable tests, the British Union for the Abolition of Vivisection (BUAV) claims. The policy has been drawn up so as to ensure the testing of 30,000 chemicals brought to the market before 1981. Promotion of non-animal testing was supposed to be one of the original political objectives of the policy, but the actual proposals give no timetable for the introduction of non-animal tests – even though new legislation on cosmetics testing predicts that most animal toxicity tests ought to be replaced by 2009.

Wendy Higgins, campaigns director at the BUAV, commented: 'The new policy will not deliver a future of safe chemicals because it relies heavily on outdated, unreliable, cruel animal toxicity tests that should have been abolished decades ago. The animal test for cancer – where animals are force fed with poisons for over five years – is a poor indicator of harm in people, and even gives different results for the same chemicals at different times. A recent study shows that when chemicals were tested twice, the tests only gave the same result in 57 out of 121 cases.'

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

**AFGHANISTAN** A sample of Afghans tested for depleted uranium (DU) had extraordinarily high levels of uranium in their urine, an independent scientist claims. Dr Asaf Durakovic of Canada's Uranium Medical Research Center said: 'The donors presented concentrations of toxic and radioactive uranium isotopes between 100 and 400 times greater than in Gulf veterans tested in 1999.'

Dr Durakovic went on to say, however, that the uranium detected in the Afghans was not of the depleted variety.

This has given rise to speculation that a new type of nuclear weapon was being used by the allies in Afghanistan. Both the US and the British deny the claims.

The report can be read at: [www.umrc.net/AfghanistanOEF.asp](http://www.umrc.net/AfghanistanOEF.asp)

**INDIA** The Khasi Hills in a remote part of north-east India are suffering drought caused by pollution and deforestation. Yet the area once recorded more than 1,000 inches of rain in just one year – a global record. In 2001, the Khasi village of Cherrapunji received only 922 centimetres of rain – less than in just one month in 1861, the wettest year on record. Villagers now have to buy water from other areas.

**CHINA** The baiji, a rare freshwater dolphin found only in China's Yangtze River, could be extinct in less than 10 years if fishing practices go unchanged, according to a report by the World Conservation Union. Furthermore, the union believes that the vaquita porpoise of Mexico's Gulf of California, New Zealand's Hector's dolphin and several species of whale are also at risk. To save the baiji, the report says, it should be protected from snag-line and electric fishing, and efforts should also be made to protect the vaquita from being caught in fishing nets.

For more, visit: [www.iucn.org](http://www.iucn.org)

**INDIA** A project to bring much-needed energy to remote Himalayan villages in India using an army of 'barefoot engineers', has won the 2003 St Andrews Prize for the Environment.

The programme trains illiterate and semi-literate people to install and maintain solar power equipment. It is transforming the standard of living and independence of the communities involved, and is

drastically reducing their use of environmentally harmful fuels.

Bunker Roy, the founder and head of the Barefoot College of Rajasthan, was presented with the award at the University of St Andrews. He said that the \$30,000 prize money would go towards starting up the first 'barefoot college' for women

For more information, visit: [www.thestandrewsprize.com](http://www.thestandrewsprize.com)

**US** An art exhibition that celebrates the wilderness of Alaska's Arctic National Wildlife Refuge (ANWR) has been altered so as not to offend oil-hungry Republicans. Subhankar Banerjee, a photographer who used up his life savings to finance his photography of the ANWR, was exhibiting his pictures at the Smithsonian Institute's National Museum of Natural History in Washington DC. In March a US senator urged her colleagues to view the collection before voting on the issue of oil exploitation in the refuge. Banerjee and his publisher say they were then told by the Smithsonian that the museum had been called on to cancel or revise the exhibition. The Smithsonian denies the claims. The show was moved from the main floor to a lower-level room, however, and accompanying text was deleted or truncated. For example, one of Banerjee's captions originally read: 'The refuge is the most beautiful I have ever seen, and is so remote and untamed that many peaks, valleys and lakes are still without names.' This was changed to: 'Unnamed peak, Romanof Mountains.' Quotations from former US president Jimmy Carter and environmental writers Peter Matthiessen and Terry Tempest Williams were also deleted.



**US** Legislation currently being promoted by the American Legislative Exchange Council aims to criminalise almost all forms of animal rights and environmental advocacy. If passed, the Animal and Ecological Terrorism Act could make membership of organisations such as Greenpeace and protesting against environmental abuses illegal. Versions of the new law were introduced in Texas in February and New York in March. In Texas, the bill defines an 'animal rights terrorist organisation' as 'two or more persons organised for the purpose of supporting any politically motivated activity intended to obstruct or deter any person from participating in an activity involving animals or... natural resources.' Human rights lawyer and vice-president of the New York-based Center for Constitutional Rights Michael Ratner says the legislation is unique. 'Even under the definition of domestic terrorism in the Patriot Act you have to at least do something that arguably threatens people's lives,' he says. 'The definitional sections of this legislation are so broad that they sweep within them basically every environmental and animal rights organisation in the country.' In fact, if you're sitting with a friend in Houston reading this right now, you're probably breaking the law too.

**SINGAPORE** US deputy defence secretary, Paul Wolfowitz has admitted that oil was the reason for invading Iraq. Speaking to an Asian security summit in Singapore in June, Wolfowitz said: 'Let's look at it simply. The most important difference between North Korea and Iraq is that economically, we just had no choice in Iraq. The country swims on a sea of oil.'

His admission disproves the repeated claims of the US and UK governments that the war was not

influenced by Iraq's oil reserves, the second largest in the world.

It's not the first time he has undermined his superiors' rationale. In May, he revealed in an interview with *Vanity Fair* magazine why so much publicity had been given to the now hard to find weapons of mass destruction. 'For reasons that have a lot to do with the US government bureaucracy,' he said, 'we settled on the one issue that everyone could agree on: weapons of mass destruction.'



**UK** A new report by Christian Aid has exposed the implausibility of the British and US governments' claims that revitalising Iraq's oil industry will get the country back on its feet.

*Fuelling Poverty: oil, war and corruption* shows how 90 per cent of the Angolan government's revenue comes from oil, yet two thirds of Angola's population have no access to safe drinking water. Likewise, Kazakhstan earns billions from oil and possesses a special fund set up with these revenues. Yet a third of Kazakhs live below the UN's \$1 per day absolute poverty line. The autocratic Kazakh president has put his relatives in most of the country's positions of power, and he directly administers the oil fund himself. He is also the richest man in Kazakhstan.

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

**UK** Compensation payments for the victims of the Prestige oil spill are 'a grim joke', says Friends of the Earth. The London-based International Oil Pollution Compensation Fund (IOPC), financed largely through levies on the oil industry, has agreed to pay no more than £107m. The Spanish government has given an estimate of £200m for the post-disaster clean-up; to this must be added knock-on economic losses to the Spanish fishing industry and tourist trade. The IOPC itself has estimated that the total costs of the disaster will reach £716m.



**LIBERIA** The UN Security Council has renewed existing embargoes on trade in arms and diamonds with Liberia and introduced a ban on all timber exports from the country with effect from July 7. The ban will affect trade in species such as Liberian Azobé, Sapelli, Iroko, African mahogany and African walnut. The imposition of timber sanctions follows intense campaigning by organisations including Greenpeace and the London-based NGO Global Witness.

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

**SWITZERLAND** The Swiss canton of Basel-Stadt ended 41 years of fluoridating its water supply in April. In coming to its decision, the council said there was no proof that fluoridation prevented dental disease, while dental disease had actually increased among local children during fluoridation and the effects of fluorosis (excessive fluoridation) were underplayed and, in the case of fluorosis of the bones, ignored.

**US** Oil and gas development on Native American lands could develop regardless of environmental concerns if US senator Ben Nighthorse Campbell gets his way. The Republican is the only Native American in the US Senate as well as being chair of the Senate Indian Affairs Committee and a senior member of the Energy and Natural Resources Committee. He wants to exempt energy projects on Indian lands from federal environmental regulation. Unsurprisingly, oil and gas companies were Campbell's biggest campaign contributors from 1997 to 2002.

## Hoisted on its own petard

**US** Never-ending war has pushed accounting scandals off the front pages for some months now. Clearly keen to ensure people did not forget about its industry's problems, however, PriceWaterhouseCoopers took out full-page ads in leading US newspapers with the headline 'The dark cloud of corporate fraud'. The ads said: 'Fraud touches every company and every investor in that it creates a shadow of doubt and uncertainty. Can anyone be trusted?' Coincidentally, it was reported last month that PriceWaterhouseCoopers will have to pay \$1m to settle charges that it engaged in improper professional conduct in connection with its audit of SmarTalk Teleservices' 1997 financial statements.

## Smoke screens

**World** The tobacco industry is using 'social responsibility' arguments to 'prevent the enactment of a tough worldwide treaty' regulating tobacco marketing, according to a report by the US-based Center for Public Integrity. The industry's new 'responsible' approach must be working: British American Tobacco has been named 'best first-time reporter' in Britain's Association of Chartered Certified Accountants' Awards for Sustainability Reporting.

## Ad enough?

**UK** Tired of all those annoying programmes getting in the way of your favourite ads? Not any more. Thanks to the launch of Ad Choice, Britain's first adverts-only TV channel, you can now watch people trying to sell you things 24 hours a day. On the other hand...

## Indigenous education materials banned

**BOTSWANA** The government of Botswana has banned indigenous rights organisation Survival International's human rights education pack from the country's schools. Survival's pack ('We, the world') focuses on the lives of three tribal children from Brazil, Congo and Siberia, and includes a small section on Botswana's bushmen. It has been distributed to schools in over 70 countries, including eight African nations. The Gana and Gwi bushmen and their Bakgalagadi neighbours were evicted from their lands in the Central Kalahari Game Reserve in 2002, and forced to live in grim resettlement camps. The bushmen's land has now been carved up into diamond exploration concessions.

For more information, visit: [www.survival-international.org](http://www.survival-international.org)

What's more valuable – clean air, water and food or DDT, a full tank of petrol and £20,000 from *The Economist*?

Shell and *The Economist* are offering \$20,000 for the best answer to the question 'do we need nature?' Before we answer the question, we need to remember this: the person who controls the questions controls the answers. How different would the answers be if *The Economist* and Shell had asked one of the following: 'Does nature need us?' 'Does nature need Shell?' 'Do humans need Shell?' 'Do nature or humans need oil extraction?' 'What can we each do to best protect nature?' 'Who is the "we" in *The Economist* and Shell's question?'

But here's probably the most important question of all: 'If our answers do not fit with the financial and propaganda interests of Shell and *The Economist*, will they still hand us a cheque for \$20,000?'

Just in case we forget who is writing that cheque, the sponsors have provided several other questions to lead us on our (or rather their) way. The first is: 'How much biodiversity is necessary?' The question is insanely arrogant, because it presumes we know better than nature how much biodiversity it needs. If you really want to know how much biodiversity is necessary, don't ask me, or any other human; look to the land. And then wait 100 generations.



But it is Shell and *The Economist*'s final question that is the most revealing of all: 'Is the line between "artificial" and "natural" itself artificial?'

We've heard this argument before: 'As humans are natural, everything they create is natural; chainsaws, nuclear bombs, capitalism, sex slavery, asphalt, cars, polluted streams, a devastated world, devastated psyches... all natural.'

I have two responses to this. The first is from my book *The Culture of Make*



*Believe*, in which I said: 'This is, of course, nonsense. We are embedded in the natural world. We evolved as social creatures in this natural world. We require clean water to drink, or we die. We require clean air to breathe, or we die. We require food, or we die. We require love, affection, social contact in order to become our full selves. It is part of our evolutionary legacy as social creatures. Anything that helps us to understand all of this is natural. Any ritual, artefact, process, action is natural to the degree that it reinforces our understanding of our embeddedness in the natural world; and any ritual, artefact, process, action is unnatural to the degree that it does not.'

My second response is: who cares? I want to live in a world that has wild salmon and tiger salamanders and healthy

forests and vibrant human communities where mothers don't have dioxin in their breast milk. If you want to argue that oil tankers, global warming, DDT

and the rest of the massive death camp we call civilisation is natural, you can just go off in a corner with your \$20,000 cheque and your utilitarian-philosopher buddies and play your bullshit linguistic games while the rest of us try to do something about the very real problems caused by people who think and act exactly like you.

Derrick Jensen is an activist and author. His most recent book is *The Culture of Make Believe* (Context, 2002)

The sacking of Baghdad's ancient heritage is indicative of the US's contempt for the past, an attitude that informs its balefully materialist relationship with the earth

'History is bunk,' Henry Ford remarked glibly. In Baghdad the US went further still, and Iraq's history was razed. The US military gave the wink to looters stealing or destroying objects thought to be up to 7,000 years old. Yet they protected the Ministry of Oil with tanks. The Uruk Vase and a 4,000-year-old silver harp from Ur – artefacts of unimaginable worth – were lost. The Ministry of Oil was saved.

A library of Korans was set ablaze, literature of Ottomans and Caliphates, requests for camel convoys, perfume or advice; delicate hand-written Arabic script, burning with flames hundreds of feet into the air. As Iraqi archaeologist Raid Abdul Ridhar Muhammad said: 'If a country's civilisation is looted, its history ends. Please tell this to president Bush. This is not a liberation; this is a humiliation.'

The Americans were warned this could happen. People pleaded with Washington to protect Iraq's heritage. But the US could hardly care less. As the commentator on US culture Stephen J Whitfield has observed: 'There is an American penchant to disregard the pertinence of the past.'

In the US news is preferred to history, the present privileged over the past. Novelty is rated, the old discarded. The qualities of the adolescent – dynamism

and energy – are sought after; the qualities of age ignored. America is said to be a nation without a past; the New World, with Europe the Old. This is a lie, but a revealing one. For Native Americans, the Old World was the life they had before.

History, bunk or not, is written by the victors. So Columbus is remembered and lauded. According to some anthropologists, at least 40 million indigenous peoples died from Alaska to Patagonia following the 'discovery' of America, but that is not remembered. Colonialism has always involved the political manipulation of the past and memory. After the Easter 1916 uprising in

Ireland, Eamon de Valera is said to have remarked: 'The British never remember their history, and the Irish never forget.' The vanquishers can somehow never quite recall

the exact path they took to their present dominion, while the vanquished cannot forget their humiliations. As victims of a searing grief, Americans remember the Twin Towers, but they will never memorialise those the US murdered – in Korea, Vietnam, Panama, Nicaragua, Afghanistan, Iraq.

One reason why Americans, and indeed many Europeans, forget the past is because of where they think it is. Ask them and they will probably suggest it is on a line of time behind you – abstract, invisible and over. But, overwhelmingly, indigenous peoples see the past as being embedded in the land. The Arakmbut people in the Peruvian Amazon say: 'Without the knowledge of history the land has no meaning, and without the land neither the Arakmbut history nor the culture has any meaning.' The Quechua concept '*pacha*' means both 'land' and 'time'. For aboriginal Australians, the ancestors in the dreaming 'became' the country, so the past is immanent in the land. 'History,' says aboriginal Australian writer Herb Wharton, 'comes up from the land.' The past still exists, opaquely present in the earth – alive. It is a mysterious source of sacred energy.

The West does not see the past in the land, nor recognise it as alive. Rather, the past is cut off, discontinuous, dead and for sale. The matrix of attitudes from which this uniquely Western view derives distinguishes the factual from the symbolic, the material from the



numinous, the profitable from the subtle, exploitation from integrity.

But there's more. Time is a political subject, and inherently different notions of the past have direct – and contemporary – political consequences. If the underground past is a source of sacred energy to indigenous people, it is merely a source of literal energy – fuel – to the West.

All over the world, indigenous peoples protest against oil drilling and mining that destroys their present-past. Aboriginal Australians are fighting against uranium mining; left unmined, the uranium energises the earth with *djang* – incipient power, subtle energy. The infamous copper mine at Freeport, West Papua, is on a site sacred to indigenous people – the residing place of dead ancestors. When I went

there, people told me of the rapes, the murders, the vicious varieties of torture they had suffered because of their efforts to protect their land and their past. I met some people who had gone mad after being forced to watch the imaginative sadism of the Indonesian torturers protecting the mine. In southern Montana, permission has been given for a test well in Weatherman Draw – a site sacred to Native American Crow people. There is rock art there up to 1,000 years old. The drilling that threatens this history will provide for less than a day's worth of current US energy demands.

The U'wa people in Colombia consider the 'past' of nature in the underground oil reserves as the 'blood of the earth', and say that their land is 'alive' with oil. To take out the oil is to kill the land and themselves; without the land they 'are not'. Occidental (that is, Western, as opposed to Oriental) ways of thinking give rise to Occidental exploitation. How grimly appropriate then that the U'wa lands have been threatened by the US oil corporation Occidental. BP, meanwhile, has the nerve to sponsor an exhibition at the British Museum on art and memory in world culture.

And now, in Iraq as all over the world, the past is destroyed to fuel the present. For Iraqi culture this is year zero, and the beginning of the new American century. History is not welcome.

Jay Griffiths' writing on the politics of time can be read in *Pip Pip: a sideways look at time* (Flamingo £7.99)

Mounting interest in wildlife surveys suggests growing concern for the natural world. You need to be aware before you care

It's often noted that divers and orchestral conductors can live to a great age. It's got something to do with their activities, people say; the constant sweeping of their arms providing for healthy chest cavities in which heart and lungs can cheerfully get about their business even as the decades fly by. Perhaps that's true, but I also wonder whether the childlike enthusiasm that keeps them striving for that still unseen seabed, or those perfectly executed cadences, carries them on beyond the point when most mortals have grudgingly accepted that the best life has to offer is a good cliffhanger on Corrie and a pain-free night.

If that is so, then the category of fulfilled Methuselahs should include the occupation of naturalist. At the end of April, two of our most venerated naturalists folded their wings for the last time after nearly 200 years between them of examining nature. The first was Guy Mountfort, who gave a lifetime of service to the study of birds and nature conservation. His 1950s field guide to bird identification spawned an entire new generation of birdwatchers who went on to provide the bedrock of British ornithological research. He will probably be best remembered in general circles, however, for his leading role in international tiger conservation, and for co-founding the World Wildlife Fund in 1961. Among his colleagues in this venture were two other leading ornithologists – Peter Scott and Max Nicholson.

Mountfort died on April 23 aged 97. Just three days later Nicholson followed. He had gone one better: he was 98. Director-general of the international conservation organisation the Nature Conservancy for many years, Nicholson developed patterns and models for bird censuses and understanding bird ecology. He also founded the British Trust for Ornithology, helped found the British Trust for Conservation Volunteers, was president of the RSPB, chaired the 1951 Festival of Britain committee, worked towards an overhaul of the British civil service, wrote umpteen books and treatises on birds, and created the New Renaissance Group to promote sustainable development. ►

The man's accomplishments are staggering, but to my mind can best be summed up with a single anecdote. There is much being written about the current demise of the house sparrow in Britain.

Whenever newspapers pick this story up they tend to quote the fact that in 1925 2,603 of the birds were counted in Kensington Gardens, whereas only eight were found during a



comparable count in 2000. What they don't mention is that that first count was conducted by Max Nicholson, who as a young man was testing out his new bird census methods. Another thing they don't say is that the 2000 count was also handled by Nicholson, who even in his 90s was still working hard for the creatures of the planet.

This year the RSPB conducted its annual garden birdwatch. It showed that the sparrows are still in decline. Starlings are suffering, too, although other species – such as tits – are faring rather well, while comparative rarities such as waxwings are beginning to make a significant impression.

Frankly, the RSPB didn't discover much that we didn't already know. But one statistic stands out from all the others: this year, 303,000 people took part in the survey. Nearly a third of a million Britons spent an hour in their gardens or nearby parks on a chilly January weekend and counted birds. Two years ago, there were only 55,000 prepared to make the effort.

Among those numbers were thousands of schoolchildren, some of whom might in 90 years' time – as they're interviewed for satellite internet holovision on their contribution towards the science of conservation and their radical ideas for saving the UK from sinking into the sea – point towards that hour in January as the genesis of their interest.

For counting and naming creatures is the first step towards doing something – whether it be setting up conservation charities, or stopping pesticide use in your garden. You have to be aware before you can care. Shifting animal groups for a moment, Butterfly Conservation conducted its own first nationwide survey of garden butterflies last year, garnering interest from over 33,000 people. But

these people are more than just interested: they're active, too. Martin Warren, the chief executive of Butterfly Conservation, told me recently that whenever he goes to international lepidopterist seminars

and meetings he always hears the same thing: 'We'd give our right arm to have the army of volunteers you have in the UK. You have such an amazing ability to collect

data and manage habitats.'

So Nicholson and Mountfort have gone, but a whole new generation is rising to take their places. And it's a good thing too. We're living with more threats to nature than we've got fingers to count them on: GM crops; cloning; out-of-town

supermarkets; new agricultural practices; airport construction. (That's one hand filled up.) Mobile phone masts; road-building; greenfield development; chemical usage; oil dependence. (Now we've got to use our toes.) To turn the tide we can no longer rely upon the work of just a few naturalists, but must work to bring out the naturalist in each of us.

As Mountfort – whose profession as an advertising executive shows we can all play a part – said shortly before he died: 'No one can personally take on all the world's problems. The main problem in this new century will be the demands of the increasing human population throughout the world. This will be the main factor determining the pressures on all forms of wildlife and their habitats. We must never let up on our commitment.'

Long live the naturalist.

Malcolm Tait is former managing editor of *The Ecologist*



## The 'war on terror' damages US civil liberties, not al-Qaeda, the most

With the war against Iraq over and Americans going to the polls to elect their president next year, it might be a good time to browse *The Turner Diaries* and Gore Vidal's *Perpetual War for Perpetual Peace*.

The former was the inspiration for Timothy McVeigh; the latter includes his self-written eulogy. Together, the two books show how the US terrorist chose the wrong government (and how Osama bin Laden chose the right one) to harm US democracy.

*The Turner Diaries* is an apocalyptic novel that opens with a convenience store robbery and ends with an Armageddon-style global holocaust that leaves only white Anglo-Saxon Protestants standing. The government of the US responds to a terrorist attack (the bombing of a federal building in Oklahoma) by cracking down on dissent, expanding the power of the executive, and shredding constitutional civil rights protections. White 'patriots' respond by declaring war against a government that had once tried to take away their guns. Thus begins a cycle of violence

that ends with the ultimate worldwide war. It is a vision straight out of the *Book of Revelation*.

But McVeigh's expectation of a repressive federal reaction to his right-wing terrorism ran into a snag: then US president Bill Clinton knew the difference between a rogue nation and a rogue criminal.

Like every US president since George Washington, Clinton knew that nations only declare war against nations. While armies deal with rogue states, the police deal with criminals – be they domestic or international.



Just as Germany had responded to the Red Army Faction, Italy had responded to the Red Brigades, and Greece responded to the 17 November terrorist group (among others), Clinton used the full force of the criminal justice system in his drive to bring McVeigh to account; he even had Interpol and overseas police agencies looking for possible McVeigh affiliates. As a result the trauma of the Oklahoma City bombing was limited, closure was achieved for the victims, the civil rights of all Americans were largely left intact, and the US government was able to get back to its constitutionally-defined job of ensuring life, liberty and the pursuit of happiness for its citizens. (Although the US's Anti-Terrorism Act of 1996 did erode some civil liberties, it was nowhere near as draconian as the current US administration's Patriot Act, and was only passed after a full year of careful Congressional deliberation.)

Every US president from Washington to Clinton understood the logic of the founding fathers expressed by James Madison in 1795 when he wrote: 'Of all the enemies to public liberty war is, perhaps, the most to be dreaded because it comprises and develops the germ of every other. War is the parent of armies; from these proceed debts and taxes. And armies and debts and taxes are the known instruments for bringing the many under the domination of the few.'

'In war, too, the discretionary power of the executive is extended. Its influence in dealing out offices, honours and emoluments is multiplied; and all the means of seducing the minds are added to those of subduing the force of the people. The same malignant aspect in republicanism may be traced in the inequality of fortunes and the opportunities of fraud growing out of a state of war... and in the degeneracy of manners and morals engendered by both. No nation could preserve its freedom in the midst of continual warfare.'

Although numerous recent US presidents have declared 'wars' on abstractions like poverty, illiteracy, drugs and a variety of other social ills, all were aware that these 'wars' were politically useful rhetoric. Real

war can only be declared by one nation against another; it's not possible to declare a war against an abstraction.

September 11 is continuously cited to rationalise the loss of civil liberties and the ongoing traumatising of the people in the US with daily 'terror alerts' and a never-ending 'war on terror'.

But the events of September 11 did not constitute an act of war, because they were not committed by a nation. They were, instead, crimes perpetrated by a criminal and his followers.

They were horrific crimes, certainly; crimes that required strong, swift and sure response; crimes that nations, corporations and other individuals may have abetted and must be held accountable for – both domestically and in the international venues of the UN and the International Criminal Court; crimes deserving a thorough investigation – one that has yet to begin.

But bin Laden and al-Qaeda are not nations. Bin Laden is a criminal, and his group is a sort of Middle Eastern mafia with terrorist ambitions. Al-Qaeda was initially funded by Poppy bin Laden, who was



coincidentally a business partner of Poppy Bush. And according to most of the world's police and intelligence agencies, bin Laden is dead (or dying) and his organisation is in tatters.

For the US to continue using its military against a criminal organisation would only compound the horrific crime of September 11, because armies aren't particularly good at police work.

It's time to restore civil liberties to Americans, rein in an executive intoxicated by warfare, hand over to US and international police agencies the very real and very big job of dealing with the remnants of al-Qaeda around the world, and prevent a recurrence of September 11 by investigating who was involved and how they pulled their crimes off in the first place. Anything else would simply exacerbate the damage to US life inflicted by that day.

Thom Hartmann is the author of *Unequal Protection: the rise of corporate dominance and the theft of human rights*

## Why are environmentalists such a bunch of wimps?

One of the biggest surprises of the first years of this new century has been the public timidity of environmentalists. Instead of bold beliefs and visions (new politics for a new century) environmentalists have been timorous beasts. Contemporary environmentalists are an extremely cautious lot; stealthily creeping up on the body politic; more concerned with infiltration, influence and incremental gains than a full-frontal challenge. There are few bold statements or clear visions about what's happening to our environment and what kind of society, countryside and world we really want to live in.

Unfair, I already hear some of you cry. Just look at how environmental campaigning groups fight every inch of the way – on global warming, on waste and recycling, on alternative fuel sources, on protection of species. Look at the ways these groups have forced old politics to gradually reshape. Maybe environmental issues don't dominate the headlines, but at least they are beginning to feature in the nitty-gritty of policy. All British political parties now have policies on waste and recycling, for example. So who wants to go back to being all ideals and no action?

But for all that (and no one could admire environmental organisations more than myself) contemporary environmentalism is in many ways fearful, scared of arguing that protecting the environment should be an unequivocal priority; fearful too of being ridiculed for those beliefs. Environmentalists these days are petrified of being branded naive 'Good Lifers', or doom-sayers, or, worst of all, green idealists. Unfortunately, this fear has led to a slightly uninspiring dish of pragmatic politics: keep it small; keep it manageable; keep it attainable.

We seem to have accepted that if environmentalists state unequivocally that their aim is to secure the quality of the environment and protect the biodiversity of the earth 'sensible' people will be scared. Sensible people are 'realistic', and being realistic in politics means accepting that what matters most is increasing material well-being, national economic growth and social justice. Going softly-softly into this ►

arena means accepting that this hierarchy of values can't be challenged directly but must be worked with – altered bit by bit.

But can such an approach work? Take what's happening to the world's mammals. A recent UN report revealed that 25 per cent of the world's mammals face extinction within the next three decades. For some, like the great apes, this is no slow decline but a race to extinction. Environmentalists have brought this to the world's attention, but they are also strangely muted and over-complex when they do so. They draw attention to the loss of habitats, to the poverty of native peoples and the ways in which our economy is complicit with damaging trade. This is all true, but somehow has the effect of pre-empting and disarming any shock or horror people might feel.

We are being told that environmentalists are not anti-people; they are just as concerned about human communities, and they won't blame anyone. We rarely get a really trenchant argument that nothing can justify the loss of these species. Nor do we get a focus on what the world would be like without these species: the loss of variety, the loss of our sense of relationship to other species – the loss of something that inspires joy and wonder at our place in the world.

That's why it's always such a pleasure to read political theorist John Gray's articles and books. He regularly flies in the face of the political theorists among whom he moves to argue the absolute need for these species to survive. And, rather than asking environmentalists to turn their argument into something palatable for existing



politics, he calls on the political theorists to find an answer.

Environmental cowardice can be seen across any number of issues. When it comes to transport, for instance, I've lost count of the number of times environmentalists have taken it on themselves to reassure the public that they are 'not anti-car' and that they fully understand how much individuals love and need their cars. Yet I can't help thinking that we might shift public opinion more effectively if environmentalists dared to try to whip up more hatred against the car for what it has done to the quality of our environment. I

can't help feeling that for as long as we try to find solutions within the existing political agenda we'll never force people to come up with radical solutions.

The same convoluted

timidity affects the debate about the loss of the UK's countryside. Although environmental groups are obviously very unhappy about the rate at which the British countryside is disappearing, they are also often staggeringly accommodating – engaging in damage-limitation consultations with developers and councils about the nature of their developments rather than keeping up the heat against further losses. Again, none of the environmentalists seem prepared to use strong emotional rhetoric about feelings, what people value, how they would mourn and feel impoverished if we lose any more countryside to dull suburbia.

Perhaps it is this language of feelings that environmentalism fears most; as if it were scared of exposing the fact that it is, in important ways, very different from the rest of politics. Environmentalism deals with human concerns that don't normally get into politics: local attachment, love of scenery, pleasure and peace. It's also about grief at losing places and species we feel deep attachment to. Only when we begin to get the courage to talk about this, will existing political objectives be forced to accommodate environmental concerns and not the other way round.

Ros Coward is a columnist for *The Guardian*

The 'disappearance' of 'Mrs Anthrax' is an utterly unlawful attempt to silence a respected scientist and critic of the US's use of depleted uranium weapons

In increasingly surreal post-war Iraq, a world where those deemed 'most wanted' by the US are pictured on a pack of playing cards and given silly nicknames ('Dr Germ', 'Chemical Sally', etc) in a mindset most people grow out of after kindergarten, the arrest of Dr Huda Ammash ('Mrs Anthrax') is a cause of particular concern.

Dr Ammash, a graduate of the University of Missouri and Texas University, is an internationally respected environmental biologist. Since the 1991 Gulf war, she has devoted much of her expertise to studying the health effects of the toxic and radioactive depleted uranium (DU) weapons used by the US and UK on both the civilian population of the region and on Iraqi and allied soldiers.

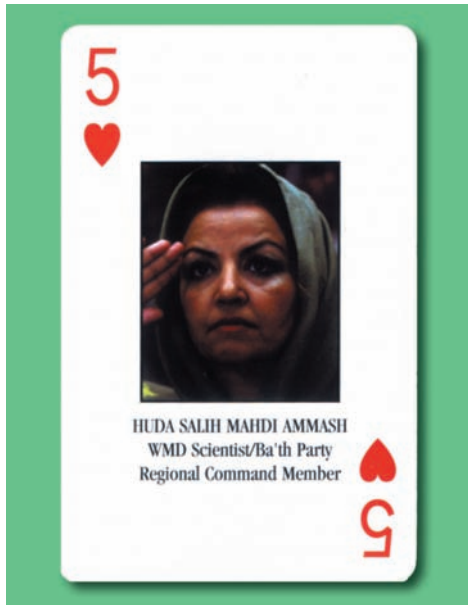
She is a fellow of the Islamic Academy of Science, and has served as dean of both the College of Education for Women and the College of Science at the University of Baghdad. She has spoken around the world on the dangers of DU. At a major international conference in Manchester three years ago she and an expert from Hiroshima drew stark comparisons between radiation-linked cancers and birth defects in Iraq and Japan.

She also contributed a chapter to *Iraq Under Siege: the deadly impact of sanctions and war*, which was published in Britain by Pluto Press and by South End Press in the US. Pointing out that DU weapons remain toxic and radioactive for 4.5 billion years, Dr Ammash drew attention to the illegality in international law of weapons whose effects continue to kill and pollute long after wars have finished.

The contributors to *Iraq Under Siege* include Robert Fisk, John Pilger, Noam Chomsky, Howard Zinn, Ali Abunimah and the former UN humanitarian coordinator in Iraq Denis Halliday. The book is a devastating condemnation of pollution, infant mortality and dodgy dealings at the UN – all the consequence of policies driven by the US and Britain.

South End Press has no doubt about the reason for Dr Ammash's arrest, and is 'outraged at the US extra-legal' action. The





publisher's Alexander Dwinell demands that Dr Ammash 'be released immediately', saying: 'The US government is trying to silence [her] outspoken criticism of the US role in causing cancers and other illnesses in Iraq through its use of biological hazardous weapons such as radioactive DU.'

It is deeply disturbing that those arrested by the US in Iraq are being 'disappeared' with absolutely no transparency and even more totally than those held in Guantanamo Bay. Ironically, that is exactly what happened under Iraq's previous regime.

Sabah al-Mukhtar, the president of the League of Arab Lawyers and whose practice frequently acts for governments (including, on occasion, that of Kuwait) is incandescent: 'From A to Z this is illegal – from the occupation to the detentions; to target, detain, disappear without any charge being made public, with no legal representation, with no magistrate, public prosecutor or proper state representative having made the decision. For the US Army in Doha to issue a list of nationals in another country – it is unlawful, unlawful, unlawful.'

With the ghost of Joe McCarthy walking tall in the White House, Dr Strangelove stalking the Pentagon and Machiavelli's descendents apparently running US foreign policy, the future looks bleak for Iraq, democracy and the disappeared. Ironically, many Iraqis are already saying it was better under Saddam. Regime change anyone? ■

Felicity Arbuthnot has written and broadcast on Iraq for many years and was senior researcher, with Denis Halliday, on John Pilger's award-winning documentary *Paying the Price: killing the children of Iraq*

<b>DOB</b>	6/7/1946
<b>Marital status</b>	Married with two daughters
<b>College</b>	Yale University, bachelor's degree in History
<b>Graduate school</b>	Harvard University, Master of Business Administration
<b>Address</b>	The White House, 1600 Pennsylvania Avenue NW, Washington, DC 20500, US
<b>Driving licence</b>	At least one conviction for drunk driving in Maine (Texas driving record erased and not available)

#### PRE-PRESIDENTIAL EXPERIENCE

- Ran for Congress and lost
- Produced a Hollywood 'slasher' B movie
- Bought an oil company, but could find no oil in Texas; company went bankrupt shortly after he sold all his stock
- Bought the Texas Rangers baseball team in a sweetheart deal that took land using taxpayers' money
- Elected (with father's help and name) governor of Texas

#### ACCOMPLISHMENTS AS TEXAS GOVERNOR

- Changed pollution laws for power and oil companies and made Texas the most polluted state in the US
- Made Houston the most smog-ridden US city
- Bankrupted the Texas government to the tune of billions
- Executed more people than any governor in US history

#### ACCOMPLISHMENTS AS PRESIDENT

- Attacked and took over two countries
- Spent Clinton's federal budget surplus and bankrupted the US treasury
- Shattered record for biggest annual deficit in history
- Oversaw the most private bankruptcies in any 12-month period
- Oversaw the biggest ever drop in the value of US equities
- First president in decades to execute a federal prisoner
- First president ever to enter office with a criminal record
- First year in office set the all-time record for most days on vacation by any president in US history
- After taking all of August 2001 off for vacation, presided over the worst security failure in US history
- In first two years in office over 2 million Americans lost their jobs
- Appointed more convicted criminals to administration positions than any president in US history
- Signed more laws and executive orders amending the US Constitution than any president in history
- Presided over the biggest energy crisis in US history and refused to intervene when corruption was revealed
- Cut healthcare benefits for war veterans
- Inspired the biggest protest (February's 15 million-strong demonstrations against war in Iraq) in history
- Dissolved more international treaties than any president in US history
- Presided over the biggest corporate stock market fraud in the history of the world
- First president in US history to have the UN remove the US from its human rights commission
- First president in US history to have the UN remove the US from its elections monitoring board
- Withdrew from the World Court
- World record holder for most corporate campaign donations
- Spent more money on polls and focus groups than any president in US history
- First president to run and hide when the US came under attack (he then lied, saying the enemy had the code to Air Force One)
- Used a policy of 'dis-engagement' to create the worst Israeli-Palestine relations in 30 years
- Changed US policy to allow convicted criminals to be awarded government contracts
- Failed to fulfil pledge to get Osama bin Laden 'dead or alive'
- Prevented any public investigation into September 11 – the biggest security failure in US history
- Removed more freedoms and civil liberties for Americans than any other president in history

#### RECORDS AND REFERENCES

- Vietnam draft dodger
- Refused to take drug test or answer any questions about drug use
- Records of tenure as governor of Texas sealed from public view
- Records of investigation for insider trading unavailable for public view
- For personal references, please speak to daddy or uncle James Baker



Solar Energy Site



Wind Energy Site



Renewable Tech Site



Water Recycling System



Bioremediation Site



Composting



Eco-Spiritual Site



Traditional Way of Life

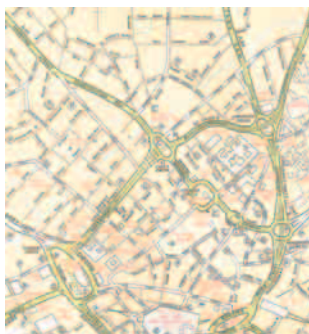


Farmers Market



Eco-Agriculture Site

**GREENMAPS • Maps give a notoriously subjective view of the world. Tom Stafford reports on a growing global project to create maps made by humans for people**



This is a city map. It shows the roads and the buildings. Hard black lines against grey terrain. Maybe it shows where you can buy petrol. Or fast food. All you need to keep you going. Just.

It could be any city, because all cities look the same in this map. All the lines are drawn with metre accuracy, sharp and clean. There is a precise scale, all the methods for the map's construction formalised and explicitly stated in rules of

what can and can't appear. This professionalism could almost convince you that you are looking at the best possible map of the city. But accuracy isn't the issue, selectivity is. This map only shows part of what makes up a living city. This map only shows the dead, concrete world.

This is just one vision of the city; it is not the city itself. It was made to help strangers move through the city with ease. It wasn't made to show a city for living in.

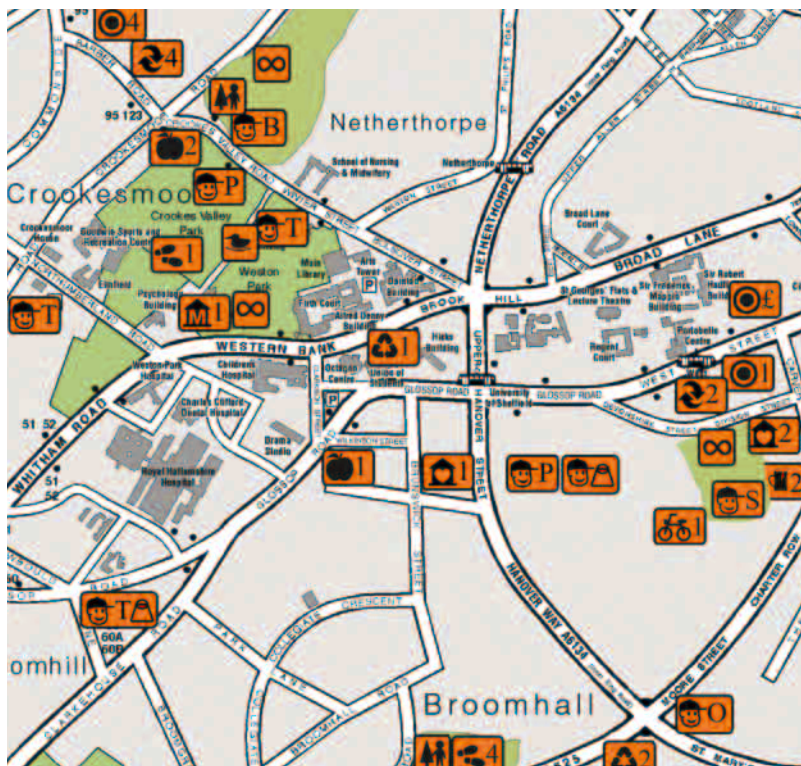
**Green eyes**

Opposite are some very different city maps. They show bicycle routes, walks through parks and places where you can see the stars at night. They show the recycling banks rather than the money banks, the community centres rather than the car parks, the veggie cafés rather than the fast-food outlets. These maps show the city as it can be lived in, rather than moved through. They show the green spaces, the veins of a local economy, the places that are good for your heart and soul.

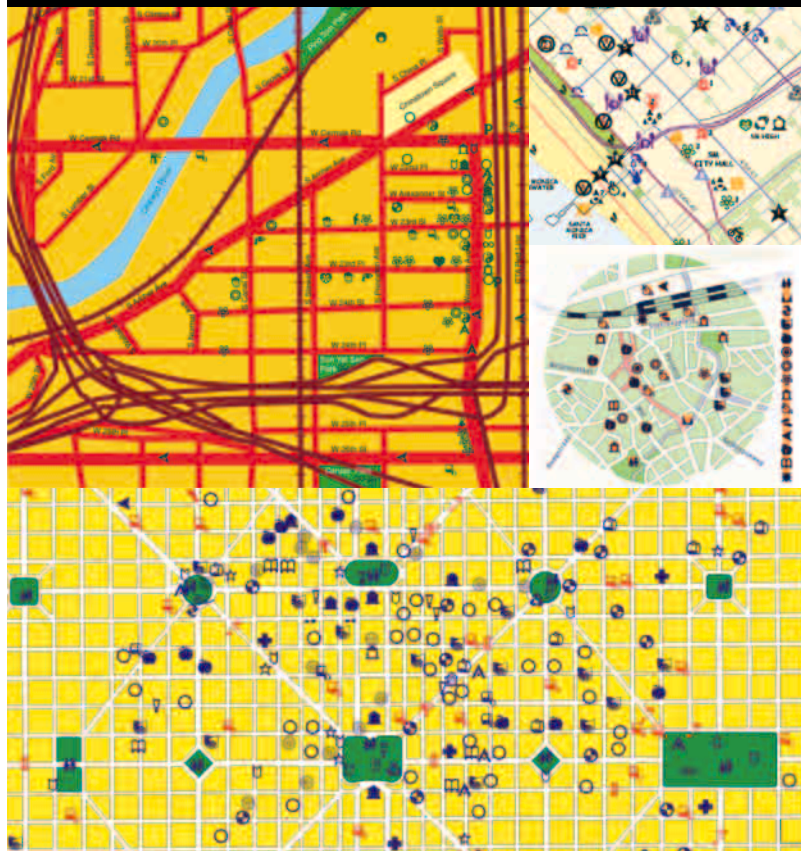
They are Greenmaps. They were made by people in their spare time. Cut together from a shared vision, their standards are not rules to be obeyed but ideals to be aspired to. The maps were sketched out on the backs of envelopes, discussed in front rooms over cups of tea. People argued at meetings about whether to show a café because it serves Fairtrade coffee – even though it's part of a large national chain. 'Maybe we should offer to put it on the next version of the map, but only if it changes all its chocolate and juices to Fairtrade as well,' someone suggested.

People walked around their part of the city looking for green spaces, for special trees, play areas, wild-growing fruits and herbs, and places to hear interesting sounds. People drunk too much organic ale at the local brewery, but put the brewery pub on the map nonetheless.

Greenmaps are never wholly accurate. Because they map human culture – precious things, moving things –, they are always becoming out of date. A local fruit and veg shop closes down. A new bike repair shop opens up. The mapping group decides it's time to mark on the map the place where people normally gather to protest in the centre of town.



Green maps (clockwise from top left): Sheffield (UK); Hamilton (New Zealand); San Francisco Civic Center



Wastewater Treatment Plant



Landfills



Solid Waste Transfer Station



Incinerator



Energy Generating Facility



Blight Site



Danger Zone



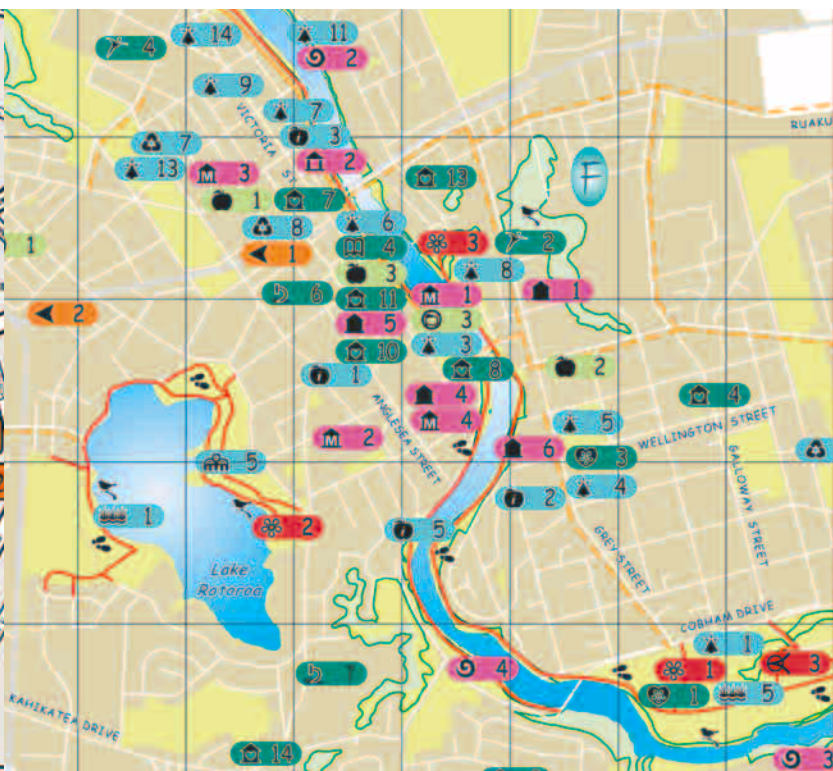
Traffic Hazard



Noise Pollution Source



Air Pollution Source



re (US); La Plata, Buenos Aires (Argentina); Chinatown, Chicago, (US); Santa Monica (US); Eindhoven (Holland)



### Icon sharing

The Greenmap icons are shared between maps of different cities. The icons give continuity to a global network of local grassroots projects. It means the visual language of the Greenmap can be read even if you don't know the language spoken in a city.

Yet it is not prescriptive. In each city that's mapped the mapmakers adapt the icons to their particular needs, inventing new icons and redefining old ones. In Singapore, for example, they added an icon for mangrove forests. In Buenos Aires certain symbols show shantytowns and self-made housing. Mappers in Victoria Falls, Zimbabwe, added icons to mark deforestation and soil erosion. And in Sheffield a smiling child's-face icon shows things that you can play on outdoors, for free, like playgrounds, climbing boulders and tennis courts.

And so it goes on. The Greenmap of Havana was designed for schools to teach children about sustainability. In Toronto the Greenmappers wanted a map to promote green tourism. The Greenmap could help visitors enjoy a city they don't already know, or it could help current residents access environmental and community resources they maybe hadn't noticed before.

The Greenmap gives more choices for people who want to buy locally grown food, who don't want to support multinationals. The Greenmap encourages community participation, encourages really inhabiting the city space – enjoying it and getting to know your neighbours. Community centres shown on the map host time banks and community credit unions.

The Greenmap is part of localisation, not globalisation. It shows the economy that is particular to a city, not one that is the same everywhere. It is about working and playing together, rather than just buying and consuming alone.

The Greenmap re-imagines the city; it shows what is already there, and could serve for inspiration for what might be. It gives you back the city – not in someone else's sterile view, but as a riotous living tapestry of human activity. It manifests the connections between the environment and culture, between humans and nature. By aiming towards a sustainable city, it aims to create links between now and the future.

There could, and should, be a Greenmap for every city. Maybe there is already a Greenmap of your city. Maybe there isn't. Maybe you could be the person to start to make it happen.

Maps pretend to be objective, but always just show a selected view of the world. Whose vision of the world are you buying?

Visit [www.greenmap.org](http://www.greenmap.org) for more. On maps in general, read *The Power of Maps* by Dennis Wood. Tom Stafford is a research assistant in the Department of Psychology at the University of Sheffield and a coordinator with the Sheffield Greenmap Project

### THE HISTORY OF GREENMAPS

Wendy Brewer designed the original icons for the Greenmap system. They were first used in the Greenmap of New York in 1995. The 200th Greenmap project was launched in Kuala Lumpur this March; the city will be the 21st world capital to be mapped. Greenmaps now cover 37 countries on all six continents.

Explore the Greenmap network on the internet at [www.greenmap.org](http://www.greenmap.org). The copyright of the Greenmap Icons belongs to Modern World Design 1999.





# Spanner in the holy

In September 2001, a Roman Catholic priest of the Passionist order scrambled undetected under two wire fences, scaled a gate and penetrated the RAF base at Wittering in Cambridgeshire. His goal was to disable equipment used to convey nuclear weapons. Using a hammer, he slashed the valves to the tires of a warhead-transporting lorry and the air came roaring out. He pounded on the button of the door of the cab unit and it popped open. ('There seems to be a vital flaw in the security system,' he later chuckled. 'Don't tell the car thieves.') He and his co-activist then smashed up the dashboard and plastered graffiti across the lorry, aiming to do as much damage as possible. For four hours no one came to arrest them. Eventually, he went and found a soldier himself and showed him what they had

done. Only then were they arrested. Asked why he gave himself in, the priest explained: 'I didn't want them to think it was a terrorist attack.'

I am walking along Whitehall on the fourth 'Stop the War' march with this machine-wrecking priest. His name is Father Martin Newell. In a low but very direct voice he tells me about his work while cheerfully collecting armfuls of leaflets, banners and flowers.

He passionately believes that Britain's nuclear weapons are immoral. He cites the Vatican statement *Gaudium et Spes (The Church in the Modern World)*, which declares that 'the destruction of whole areas along with their inhabitants is a crime against humanity'. This is backed up by the International Court of Justice's judgment of 1996, which found that the threat or use of nuclear

weapons is contrary to the rules of international law.

Father Martin is convinced that the threat of nuclear war keeps poorer countries from challenging Britain's first world status, allowing us to live a materially prosperous life. The 'gun in a drawer' argument for keeping nuclear weapons as a deterrent does not stand. 'The British system contains within it the intention to use the weapons. The military is drilled and ready to use them. These weapons are being maintained at huge cost. They are there and ready to use to protect British resources and assets abroad; in other words, to keep us rich and other countries poor.'

But how does a priest justify committing criminal damage? Father Martin says the catechism stipulates that while Catholics must obey the law they must follow, above all,

their consciences. The Nuremberg Principles (by which the Nazi war criminals were tried in 1946 and which were adopted by the UN's International Law Commission four years later) state that there is an obligation to disobey unjust orders. And international law declares nuclear weapons illegal. It is Britain, therefore, that is breaking the law – not Father Martin.

For Father Martin the Wittering action was 'sacramental,' a grace-bearing religious rite – and an echo of Christ's arrest, trial and execution. 'Everybody should take every course of action to create a just and peaceful society,' he contends. 'My job is to waken people's consciences, to show what following Christ should be about in the 21st century.'

Father Martin's political consciousness developed slowly. He refers to September 2001 as being a '*kairos*' – a moment of crisis. 'The

Ploughshares actions started in 1980 in the US. They have taken place in many different countries, with weapons as diverse as rifles, warships, missiles, submarines and aircraft being dismantled or damaged. In Britain a successful 'Seeds of Hope' Ploughshares action was carried out by four women who did £1.5m worth of damage to a British Aerospace Hawk jet. The plane was prevented from being exported to Indonesia, where it might have been used in the genocide being committed in East Timor. The women were acquitted in July 1996 after they argued that their act was justified in law as they were preventing British complicity in genocide.

In February 1999 Rosie James and Rachel Wenham boarded HMS Vengeance at Barrow in Furness on the Cumbrian coast and disarmed testing equipment – an action believed to have delayed the Trident submarine's entry into service by as much as a month. They were discharged after their third trial in September 2002, when the jury could not reach a verdict.

In October 1999 three activists, Angie Zelter, Ulla Roder and Ellen Moxley, were acquitted on all charges after disarming a Trident-related facility at Scotland's Faslane nuclear submarine base in June that year. The sheriff said the women were justified in what they had done on the basis of Trident's illegality under international law.

### Justification of Trident Ploughshares 2000

Trident Ploughshares 2000 was publicly launched in Hiroshima, Gothenburg, Ghent, Edinburgh and London on May 2 1998. It aims to train and enable hundreds of people from around the world to dismantle the British Trident nuclear weapon system. The justification and mandate for the disarmament actions are:

- the advisory opinion of the International Court of Justice of July 8 1996 that confirmed the general illegality of nuclear weapons and concluded that states are under an obligation to bring to a conclusion negotiations on nuclear disarmament in all its aspects;
- the strong mandate the British population has given in recent polls showing majority backing for nuclear disarmament;
- the British Labour Party's own election promises to achieve global nuclear disarmament;
- the failure of the British government to implement Article VI of the Non-Proliferation Treaty, which promised nuclear disarmament by the nuclear powers; and
- the long-term opposition to nuclear weapons of the vast majority of the world's peoples and states, who have called for global nuclear disarmament ever since the bombing of Hiroshima in 1945.

To find out more about the movement or to support its work, contact: Trident Ploughshares, 42-46 Bethel St, Norwich NR2 1NR • 0845 45 88 366 • 0845 45 88 364 • [www.tridentploughshares.org](http://www.tridentploughshares.org)

# works

Pope said that we should all do something significant to mark the [Catholic Church's 2000] Jubilee. This was my version of "something significant". Before that, as a seminarian in the 1990s he had begun to campaign for peace with letter campaigns and petitions to the World Court. He took part in the Hiroshima 'die-ins' in which people lay in Trafalgar Square covered with fake blood, pretending to be dead to mark the 50th anniversary of the dropping of the atom bomb. He was arrested a few times for direct action but always released.

He now works with the Ploughshares movement, a confrontational but non-violent campaign against the arms race and nuclear weapons. Originally a US Catholic movement, it now has 180 activists in the UK. The name is taken from the *Isaiah* verse 'they

shall hammer their swords into ploughshares'. Its members have been involved in many disarmament actions, including the famous disabling of British Hawk aircraft bound for East Timor for which the activists were acquitted. It also aims to force the UK government to commit itself to scrapping the Trident nuclear weapons system.

Father Martin spent seven months in prison for his Wittering action, though he shrugs off suggestions that jail might have been traumatising. 'Prison is a little like spending a very long time at your local DHSS office,' he explains. 'Nobody wants to be there – not the prison warders, not the prisoners. You experience the same inexplicable bureaucracy, the same mindless boredom and extreme frustration.'

At present he works as a cleaner as part of east London group Telco's

'Living Wage' campaign, in order to demonstrate solidarity with the poorest paid workers in society and to draw attention to the ever-widening gap between rich and poor in Britain. The pay is £5.15 per hour, with no holiday pay and no pension. 'The only perk of the job is free toilet roll,' he laughs. 'But to share the experience of low-paid manual work is part of my work to declare the kingdom of heaven at hand – a kingdom of justice and peace.'

Father Martin believes that the Christian Church has forgotten that 'the gospel is about being in solidarity with the least of society, about God coming down to earth to be in communion with humanity'. 'That,' he says, 'is what love means – "communion". In our society the goal has become upward mobility, but I think the goal is to be downwardly mobile.' ■

## STARBUCKS • Dan Box finds Starbucks' 'Commitment to Origins' campaign all froth and the company's 'compassionate capitalism' hard to swallow

Starbucks trades upon its environmental credentials. And, although a favourite target for protesters, Starbucks is in no way the worst coffee company. The big four coffee buyers – Nestlé, Kraft, Procter & Gamble and Sarah Lee, which control almost half of all coffee sales between them – pay farmers 40-50 cents per pound for raw coffee. That is far below the cost of production. Starbucks pays over twice that amount, but it also aims to make commercial capital out of its 'largesse'.

In the firm's own words, 'Commitment to Origins is Starbucks' holistic view for conducting business in coffee-origin countries, as well as a line of coffee in its company-operated stores'. Both business plan and brand, the campaign is used to promote compassionate coffee sales. As customers, we have the right to ask questions about what we are sold. Before swallowing the company line, take a look behind the Starbucks' claims.

### 'Contributing positively to communities'

Starbucks' 2002 annual report begins: 'This year, as Starbucks continues to grow, we wondered whether it was possible to continue to stay true to our dream. We wanted to find out whether our way of doing business – one person, one moment, one cup at a time – would allow us to become a company that could grow big and still feel small.'

The rhetoric disguises an inexorable global advance. Starbucks does not sell coffee to one person, one cup at a time. Across the world, it sells it to 15 million customers a week. That's 2.2 million cups a day, 91,666 an hour, 1,527 a minute and 25 each second. Globally, three new Starbucks stores open every day. Last year there were 5,886 Starbucks stores across the world; this year they plan to open 1,200 more. In every high street, in 27 countries worldwide, the Starbucks experience is the same. The company does not control the coffee trade, but it does increasingly control our consumption of coffee – overcoming all local difference and customs from Bahrain to Beijing. There is even now a Starbucks in China's Forbidden City.

Like any colonial adventure, this expansion generates profit for Starbucks at the expense of the communities it occupies. Starbucks' net revenue last year was \$3.3 billion. This is money siphoned away from local economies into a network of centralised producers, distributors and marketing men. Eventually, it collects at Starbucks' Seattle HQ and is re-distributed among the company's staff – from the directors down to the shop employees who serve you your coffee. Seattle has 61 Starbucks branches; the city that represents just 1 per cent of the firm's high-street stores controls 100 per cent of the money spent in Starbucks around the world. In contrast, the New Economics Foundation think-tank calculates that £10 spent on locally-sourced food generates £25 for local economies; the money is either circulated as local wages or spent on local products.

### 'As you drink your coffee, why not take a moment to think about where it came from?'

The coffee trade is rigged against farmers who receive, on average, 1 per cent of the price of a cup of coffee sold in the high street. Of the 25 million families that rely on coffee farming, many are forced to pull children (especially girls) out of school. Others are no longer able to afford medicines or food.

Farmers receive what big companies are willing to pay – currently at its lowest since 1975. 'The market is unregulated,' says Ian Bretman of the Fairtrade Foundation. 'The weaknesses of this are not an economic issue but a social one. The market works well in its own right; it balances supply and demand; when there is oversupply it deflates prices. But for the coffee farmers there is no justice.'

In five years – the time it takes a coffee bush to begin producing beans – the value of world coffee exports has fallen by \$4 billion. Starbucks, on the other hand, announced its first \$1 billion fiscal quarter this January.

### 'All the coffee we buy must meet Starbucks quality standards'

Starbucks insistence on standardisation – all beans must be a uniform grade, colour and size – means rich agricultural land is often subjected to industrialised farming and chemical fertilisers. Coffee becomes a cash crop, which drives down the cost of production at the price of traditional farming methods and replaces food crops and forest with monocrops. The result is declining productivity, insecurity and poverty.

In its US stores Starbucks uses milk from herds treated with recombinant Bovine Growth Hormone (rBGH). Illegal in the EU, rBGH is sold by Monsanto under the trade name Posilac. Injected cows suffer a painful inflammation of the udder, and the milk they produce contains increased levels of pus. The milk also contains up to 70 per cent more of the Growth Factor 1 hormone, which has been linked to an increased risk of breast, colon and prostate cancer in humans. In the US Starbucks admits its milk is tainted with rBGH, saying it is impossible to verify whether it comes from cows treated with the hormone or not. However, a January 2003 statement to company shareholders said: 'Approximately 10 per cent of fluid milk in the US is now labelled "rBGH-free".' And while Starbucks does offer organic milk in its US stores, it costs 40 cents more. The same statement also urged shareholders to reject a proposal to label products with GM ingredients. Starbucks' directors said such labelling would 'put the company at a competitive disadvantage'. The proposal was defeated by 94 per cent at the firm's AGM.

### 'Our initiative sets 10 environmental standards. For example, suppliers should conserve the natural environment'

'Should'? These guidelines are so vague as to make verification impossible. Suppliers are expected to provide their own 'third-party documentation regarding their progress in meeting Starbucks' guidelines' – meeting the cost themselves.

This is also just a trial programme – not a long-term commitment. Starbucks 'anticipates' buying 3.5 million pounds of coffee from farmers using the Commitment to Origins standards in 2003; this represents only 1.3 per cent of the coffee Starbucks bought last year. 'Standards are not the issue,' says Bretman. 'The issue is the structure of a market in which a few companies wield enormous buying power over their producers. You don't know on the conventional market where your coffee comes from. None of these standards raise the issue of forced child labour. You can say you've been out to the Ivory Coast and it doesn't happen there, but that proves nothing.'



£1.75

1.5p

1p



## 'Our suppliers should meet or exceed local laws on employee wages, health and safety labour and human rights'

Millions of coffee farmers survive on less than \$2 a week. Orin C Smith, Starbucks' president and CEO, was paid \$1,088,269 in 2002, and received a bonus of £1,362,500. Exercising share options in the company made him a further \$36,321,643. He stands to make around \$8.5m more on share options granted in 2002.

## 'Rural communities should benefit from coffee production and commercialisation'

Starbucks advertises the fact that it bought 1.1 million pounds of coffee last year at fair trade prices (\$1.27 per pound). This represents less than 0.5 per cent of the coffee Starbucks buys each year. Fair trade is also highly profitable. While Starbucks pays \$1.27 per pound for fair-trade coffee, one pound of that coffee sells for \$11.45. That's a 90 per cent mark-up.

## 'Independent verification'

Top of the list of organisations Starbucks suggests suppliers use to verify their standards is Conservation International (CI). In 1996 CI was employed by US giant Chiquita to monitor its 'Better Banana' certification, which supposedly guarantees labour and environmental standards on Chiquita's Costa Rican banana farms. Two years later *The Cincinnati Enquirer* described squalid living conditions on the farms and the spraying of highly toxic pesticides, illegal in Europe and the US, while workers were in the fields. Orin C Smith is a CI director.

## 'We're building on our partnership with Conservation International and its conservation project at Chiapas, Mexico'

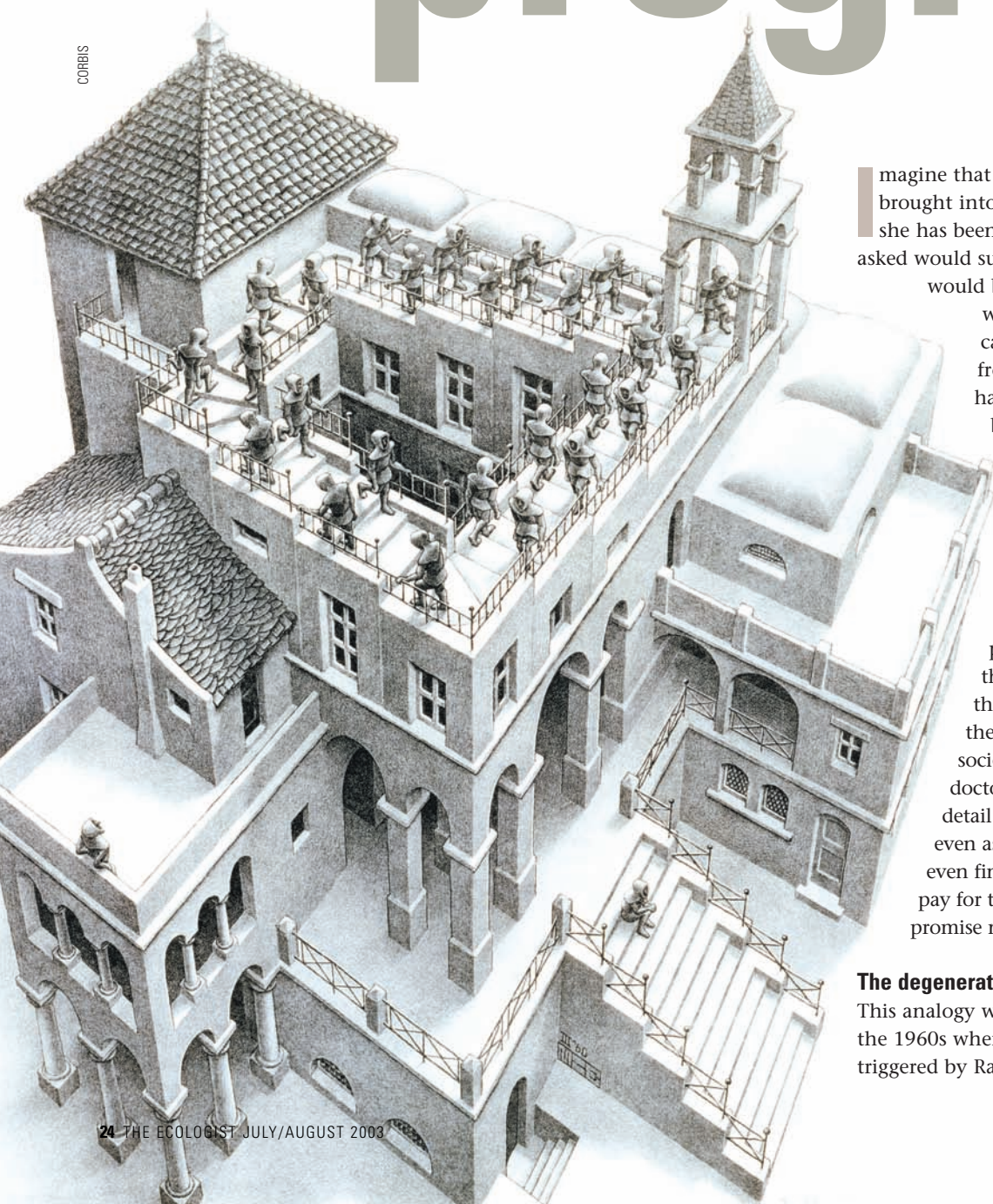
Starbucks is happy to tout the \$200,000 it invested in Chiapas in 2002. This represents 0.44 per cent of its £215m profit last year. Starbucks' money pays for 7,400 acres of coffee plantation cultivated using techniques that preserve a habitat for wildlife. But the conventional coffee farming methods used by the vast majority of Starbucks' suppliers involve clearing forests to mature the coffee more rapidly in sunlight. This causes massive loss of rainforests, and depletes habitats for bird, animal and plant species.

### Want to know more?

Visit: [www.starbucks.com/aboutus/csr.asp](http://www.starbucks.com/aboutus/csr.asp); [www.maketradeair.com](http://www.maketradeair.com);  
[www.fairtrade.org.uk](http://www.fairtrade.org.uk); [www.cafedirect.co.uk](http://www.cafedirect.co.uk);  
[www.nestle.com/Html/Responsibility/index.asp](http://www.nestle.com/Html/Responsibility/index.asp); [www.organicconsumers.org](http://www.organicconsumers.org)

Our sick society and stupid economics are dragging the planet to the edge of apocalypse. Earth's survival depends on a completely new way of thinking. By Kirkpatrick Sale

# An illusion of progress



CORBIS

Imagine that a small child with many bruises is brought into a doctor's office. The physician is told she has been repeatedly beaten. The first question asked would surely be: 'Where does it hurt?' Then there would be an examination and the application of whatever remedies are possible. But only a callous or immoral doctor would refrain from asking other questions. 'How did it happen? Who did it? How long has this been going on? Why? How can we prevent it from happening again?'

Now imagine there is a society that suffers many injuries by way of environmental assaults; some of the injuries would be obvious and open raw sores, others more hidden but deeper wounds. The first questions we should probably ask would once again be along the lines of: 'Where does it hurt? What are the problems? What is being done to violate the air, water, soil, forests, seas, animals – the society's very sustenance?' And then, like the doctor, we would examine those practices in detail and set about remedying them. We might even ask: 'Who did it?' And maybe we might even find the people responsible, and make them pay for the consequences of their activities and promise never to act similarly again. Perhaps.

## The degenerative planet

This analogy would fit fairly accurately the situation in the 1960s when the environmental movement – triggered by Rachel Carson's 1962 book *Silent Spring* –

began. And it also works for today – 41 years later. We have, more or less, learned what specific damage we are doing to our world – global warming, intense weather, ozone depletion, deforestation, overpopulation, air and water and soil pollution, toxic waste, nuclear energy, resource depletion, acid rain, desertification, topsoil erosion, species extinction, chemical poisoning, overfishing... We have identified the major ailments, publicised them from time to time, and on occasion tried to fashion modest remedies for them.

I hasten to say ‘on occasion’. Because almost all the ailments that get our attention are those that endanger people; we ignore a great many others that threaten other species – coral reefs, say, or rainforests. And many even of those that endanger us are not seriously addressed by our system; there are now, for example, almost 90,000 man-made chemicals – the great majority of which have never been tested for human safety.

And I hasten to emphasise ‘modest’. Because most of the remedies we have come up with have been Band-aids for gaping wounds. For 41 years we have been calling attention to our environment – an immense amount of legislation passed, many agencies and bureaucracies established, a huge set of codes and restrictions spelled out, great casebooks full of court cases assembled, environmental lobbies and citizens’ groups active across the world, hundreds of billions of pounds spent on studies and cures and correctives. But the hard truth is that most of the assaults on the environment go unchecked, and our total negative impact on the earth has not lessened in all this time; in fact, that impact has increased. As the *Living Planet Report* (an analysis by an international team of scientists) showed last year, the earth’s natural ecosystems have declined by 33 per cent over the last 30 years.

Worse still, the environmental pressure that humans have placed on earth – our total ecological footprint – has magnified. As the Harvard biologist EO Wilson recently declared: ‘[Our impact] is already too large for the planet to sustain. It’s growing larger, and the earth has lost its ability to regenerate’.

### **The irrelevance of individual action**

And the reason for this predicament? Our refusal to ask the other two essential questions any rational doctor would ask a sick patient: ‘Why did this happen? Is there a way we can prevent it from happening again?’

So, why did this happen? Why do most countries in the world have an economic and political system that has not only permitted this assault on the earth in the first place, but which allows it to continue (with only a few amelioratives and moderations) even when the negative consequences are so obvious? Why is it that our answer to environmental crisis is, first and foremost, individual ‘lifestyle’ reforms – recycling, solar panels, rainforest coffees, hybrid cars, string bags, organic food, composting, double-pane insulation, and the like?

The whole individualist what-you-can-do-to-save-the-earth guilt trip is a myth. We, as individuals, are not creating the crises, and we can’t solve them. Take our crazy energy consumption. For the past 15 years the story has been the same every year: individual consumption – residential, by private car, and so on – is never more than about a quarter of all consumption; the vast majority is commercial, industrial, corporate, by agribusiness and government. So, even if we all took up cycling and wood stoves it would have a negligible impact on energy use, global warming and atmospheric pollution. I mean, sure, go ahead and live a responsible environmental life; recycle, compost, ride a push-bike; but do it because it is the right, moral thing to do – not because it’s going to save the planet.

If we really want to understand why this happened we have to ask ourselves another question: ‘Why is it that we seem willing to live with the threat of apocalypse rather than trying to seriously alter a world where consumption, of anything, is seen as unrelieved virtue, production, of anything, is regarded as a social and economic necessity, and more, of anything (like children or cars or chemicals or PhDs or golf courses or recycling centres), is unquestioningly accepted?’

The answer, of course, is that the great majority of people do not want to do away with an economic system (it is called industrial capitalism) that provides them with material riches (sometimes in great abundance), longer lives, and non-stop palliatives like entertainment, alcohol, prescription drugs, sports and television. And the few who would like to do away with it are essentially powerless and ignored, accommodated, intimidated or repressed by the governmental and corporate powers-that-be.

The problem here is that industrial capitalism rests completely on two principles that simply fly in the face of ecological sanity. The first is the imperative of growth – of the market, of the firm, of industry, of first-quarter sales, of scientific knowledge and technological innovations, of population in general and a consuming population in particular. The second is the exploitation of resources, the using up of the earth’s irreplaceable treasures of every kind – from diamonds to oil, and forests to soil – for the benefit of human material comfort; there is only the merest consideration of the effects of this extraction, of what happens when the resources are manufactured into what economists call goods (although most of them are nothing of the sort), or of what happens when those goods are used, or how they are disposed of.

### **Economics is stupid**

I was reflecting recently on just how stupid the teaching of economics is in most universities. Economics is a subject taught without any consideration of its most fundamental component – ecology, the systems of nature on which all economic life must ultimately depend. Hence, we have a ►

profession that can measure the value of 100 bushels of wheat coming off a farm but which has no way of factoring in (subtracting, in fact) the amount of topsoil eroded or poisoned in the process, the damage to the surrounding ecosystem, the effect of toxic run-off from fertilisers in streams and bays, or the enormous environmental costs of mass-production artificial fertilisers, pesticides and herbicides and high-tech farm machinery. Economists ignore this information not because they are idiotic, cruel or dumb, but because they are conditioned by their education to see the natural world only as resources; they do not understand the complexities of the science of ecology. No wonder the futurist and sustainable development expert Hazel Henderson says that economics is a disease.

Anyway, there it is: the imperative of growth, consumption and the exploitation of resources. That's what makes up the heart of capitalism; it's not capitalism's fault, it's just what it does. But as the environmentalist Jeremy Seabrook has said: 'If it had been the purpose of human activity on earth to bring the planet to the edge of ruin, no more efficient mechanism could have been invented than the market economy.'

To put it starkly, that means that the environmental movement can never win, can never be anything but a tolerated gadfly, as long as it functions within capitalist society. It's as simple as that. That is why such a dedicated and longtime activist as the late Jose Lutzenberger said a few years ago (perhaps without realising the whole significance of his remark): 'In the environmental movement, our defeats are always final, our victories always provisional. What you can save today can still be destroyed tomorrow.'

Victories are provisional because they are superficial: you get them to build a toxic waste dump but not to stop producing toxins; you get them to make cars more fuel-efficient, but they do nothing about producing them, and using them, and paving over the land and building great warehouses to accommodate them. The victories are superficial because they do not get to the heart of the matter.

### **Fictionalising apocalypse**

And the heart of the matter is that second question: 'Is there a way we can prevent environmental injuries from happening again?'

I am not especially optimistic about answering that question in the affirmative. We don't realise it, any more than fish realise they are swimming in water, but we are immersed in a culture, a way of seeing and living, that has erected a protective psychological shield that enables our society to go on doing what it does even though it knows apocalypse is pending. It is something that psychologists call 'cognitive dissonance': the ability to hold in your heart, in your mind, two contradictory beliefs or ideas – in this case, desire for the

continuance of the capitalist system *and* the health of the planet.

We achieve this, I think, by allowing ourselves to make apocalypse fictional. Ever since Hiroshima began our knowledge of environmental disaster we have produced movies, novels, TV shows and suchlike that show what environmental crises, even a worldwide catastrophe, would look like. Note, of course, that humans always survive these crises. Just making movies and stories of such things allows us to put them in a whole separate realm of thought, and lets us remove them from the real world of politics and life.

We don't really believe that we are headed for an apocalypse: that's just fiction.


Besides, we can fix it before it comes. We are smart and rich, and getting smarter and richer. We can create any technology we want, and there is no environmental problem to which there is not a technological solution. This is a very old, very rooted belief: the techno-fix. It doesn't matter that there's hardly ever been a technological solution that didn't create some new technological problem. One of the most egregious examples of this pattern is the way the treatment of US children in the 1940s and 1950s for acne, tonsillitis, adenoids and ringworm with high-dosage X-rays later turned out (according to the National Cancer Institute) to have given thyroid cancer to as many as 4 million people. But there are plenty of other examples: nuclear power, DDT, thalidomide; the list goes on and on.

And it doesn't matter that the search for techno-fixes is beyond the control of the techno-fixers (or anyone else, for that matter) to the point that Bill Joy – one of the giants of Silicon Valley – was moved just last year to caution against the potentially disastrous consequences of continuing research into genetic engineering, robotics, and nanotechnology.

No these things don't matter; our belief in the techno-fix is solid and beyond challenge. And that's why we don't take seriously those who warn of apocalypse. And that's why we're unlikely to realise how we can change the way we live so as to save our planet.

But I would add this: if there is any hope here, if we can convince enough people of the true nature of our economic system and the reality of the threats it poses to the world it will be because of our asking all the relevant questions. Not just the obvious ones: 'Where does it hurt? Who did it? How long has this been going on?' But the harder questions, too: 'Why is this happening? What will it take to stop it? And how can we fashion the elements of an ecological society – one that is modest, attentive to nature's laws and embraces the values of the living earth – as if that society were the only one available, and prevent a return to previous wrongs?' ■

Kirkpatrick Sale is the author of 10 books, including *Human Scale* and *Conquest of Paradise: Christopher Columbus and the Columbian legacy*. He is currently working on a book about the Stone Age and the evolution of human domination



**Most people refuse to eat them; the biotech companies pushing them refuse to vouchsafe their safety; supermarkets won't stock them; starving African countries refuse to grow them; the British Medical Association doesn't trust them; and the Prime Minister wants to start growing them next year across the UK...**

**What do YOU think about GM crops?**

The GM public debate, which runs throughout June and July, is the public's chance to express any concerns it may have over the growing of GM crops in Britain. Andy Rowell explains why your participation is vital

# Debate, what debate?



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**W**e've been here before. In 1998 the government was all set to start growing GM crops commercially in Britain. Many farmers, desperate for revenue and lured by the industry's outspoken promises, were willing. Yet Britain remained GM-free, and has done to this day. Why?

Simple; consumers said they didn't want the technology.

That same year the government agreed under pressure from English Nature to undertake a series of crop trials – known as farm-scale trials – to assess the potential environmental impacts of growing GM crops. There was a voluntary agreement with industry that the latter would not commercialise until the results of the farm-scale trials were known.

In September 2001 the government advisory body on GM –

the Agriculture and Environment Biotechnology Commission (AEBC) – produced a report called *Crops on Trial*, which argued that the trials should not form the sole basis of the decision about whether to grow GM crops or not, and that there should be a public debate on the subject. *Crops on Trial* also said that the public should evaluate the farm-scale trial results.

The AEBC's stance led the government to announce in July 2002 that a national GM debate would be held that would consist of three strands: first, an investigation chaired by the government's chief scientific adviser, professor Sir David King, into the scientific basis for GM; second, an economic review coordinated by 10 Downing Street's Strategy Unit; and finally, a public debate coordinated by an

independent steering group headed by AEBC chair Malcolm Grant.

However, the scientific and economic studies started long before the public debate, and they are likely to publish their results too late for the public to take them into account. Hence, the Royal Commission on Environmental Pollution's chair Sir Tom Blundell has called the public debate a wasted opportunity that will generate an 'artificial' result.

### Modifying public opinion

Speaking last month, environment minister Michael Meacher insisted that the 'key and sole criteria' on whether to push ahead with GM commercialisation was whether GM organisms could be proven to be harmful to the environment and human health. This would suggest that economics and the public's attitude were irrelevant. Indeed, Meacher also admitted that public opinion had to be 'managed' to 'try to win over public support to whatever the science is taking'. He went on to make it clear that if the EU decided we had to go ahead, we would – whatever anyone said.

This is from a man who has admitted in an interview with this magazine that 'GM is not necessary', and that 'the real problem [with GM] is whether 10, 20, 30 years down the track serious and worrying things happen that none of us predicted'.

So, if human health risks are seen by the government as a key factor why aren't they being tested for in the farm-scale trials, which are only analysing the technology's short-term effects on wildlife?

Furthermore, can we really expect a panel so heavily stacked in

favour of GM to come out against the technology it is set to evaluate? Of the 25 scientists on the GM Science Review Panel, only three can truly be said to be GM sceptics. Furthermore, as my and Jonathan Matthews earlier article in *The Ecologist* ('Strange bedfellows', April 2003) showed, the Royal Society – where most of the science debates are held and a key organiser of the process – has been working behind closed doors with some staunchly pro-GM groups.

Last month the society announced: 'We have examined the results of published research, and have found nothing to indicate that GM foods are inherently unsafe.' In doing so the society allied itself closely with Tony Blair's stance. In a speech to the Royal Society in May 2002, Blair declared: 'In GM crops I can find no serious evidence of health risks'. As the field-scale trials haven't been looking for health impacts, that is hardly surprising.

### Government enthusiasm

In that same speech, Blair praised the biotech industry. He said: '[Its] market in Europe alone is expected to be worth \$100 billion by 2005. The number of people employed in biotech and associated companies could be as high as three million, as we catch up with the US industry – currently eight times the size of Europe's.'

GM has long been seen as a key economic engine driver by the Labour government. Led by the Department of Trade and Industry's science minister Lord Sainsbury, government white paper after white paper has talked about the importance of science and biotechnology.

Sainsbury is an ardent supporter of biotech. Until they were placed in a blind trust when he became science minister, he also held large share holdings in biotech companies Diatech and Innotech. He is also New Labour's largest single donor, having donated over £8m since the party came to power in 1997.

But he is not the only member of

the government pushing GM. Clare Short, seen by some as a cabinet radical before she resigned, presided over a government department that quietly funded a £13.4m programme to create a new generation of GM animals, crops and drugs in over 24 countries in Africa, Asia, Latin America and Europe.

'There is enormous international pressure to allow GM crops and seeds in this country from the biotech corporations,' admits UK fisheries and nature protection minister Eliot Morley. In Labour's first two years in power alone, GM firms met government officials and ministers 81 times.

It is widely accepted that Blair was persuaded to back GM by Bill Clinton, leading the BBC to remark that in the GM debate 'a question mark remains over the government's independence from Washington'.

US pressure is now a lot more publicly visible. After months of sabre rattling, the US announced last month that it would take the EU to the WTO over the former's continuing moratorium on growing GM crops. US trade representative Robert Zoellick and agriculture secretary Ann Veneman held a press conference in which they denounced the moratorium as 'illegal'. 'With this case, we are fighting for the

interests of US agriculture,' said Veneman, who was joined on the podium by Dr CS Prakash – one of the US's most pro-biotech scientists – and TJ Buthelezi, a farmer from Makhatini Flats in South Africa.

Zoellick's tactics are simple. In the last two years he has met every African trade minister in a bid to get them to accept GM and isolate the EU. But with no African governments supporting the US's WTO action, now that Egypt has pulled out, African farmers are being used as PR pawns to convince regulators here that the South needs this 'beneficial' technology.

NGOs concerned with African food security are alarmed by the extent of these biotech lobbying efforts. 'They are popping up everywhere,' says ActionAid's Alex Wijeratna. 'I have just come back from Mozambique, and their representatives were there. Their influence is very pervasive'. The same is happening in Europe, where the industry is lobbying member states to get rid of the moratorium. And in the UK that lobbying is set to intensify.

### Revolving doors

Monsanto's PR company in the UK is Good Relations. The firm has close ties with New Labour. Its director is David Hill, who was chief



REUTERS

media spokesperson for the Labour Party from 1993 to 1998 and ran the Labour media operations for the 1997 and 2001 general elections.

Another biotech lobby group is the Agriculture Biotechnology Council (ABC). Stephen Smith, from Syngenta is the ABC's chair. In the autumn of last year, the ABC moved its PR account to Lexington Communications, whose director is Mike Craven – Hill's successor as the Labour Party's chief media spokesperson. Craven worked with deputy prime minister John Prescott as recently as the last general election.

Lexington has now hired Bernard Marantelli, who used to work for Monsanto, to organise a £250,000 PR campaign aimed at 'regulators, legislators, retailers and consumer groups' once the field-scale trials are published. The revised budget for the whole public debate is only £500,000.

It is clear from the amount of money being piled into the promotion of GM, that its supporters have to win the debate. GM companies are not in a good financial condition. They need the the commercialisation of technology for their survival. Nonetheless, the early drafts of the Strategy Unit's economic review suggest that when the unit's results are announced at the end of June, or soon afterwards, there will be no clear signs that GM will be good for the economy. Furthermore, the unit will state that should any of the many possible risks materialise, the financial implications could be devastating.

### Persuading the public

Which leaves only the public debate. Environment secretary Margaret Beckett has said: 'The government wants a genuinely open and balanced discussion on GM. There is clearly a wide range of views on this issue and we want to ensure all voices are heard.'

Don't believe a word of it. The public debate lasts from the beginning of June to the middle of

July, consists of only six regional meetings and, contrary to the AEBC's recommendations, will finish before the results of the farm-scale trials are published.

This is hardly surprising, as Labour MP Alan Simpson explains. 'The political establishment wants commercialisation yesterday,' Simpson says. 'It is just having to work out how to get past the two main obstacles – Meacher and the public. Meacher is Labour's only environmental credibility; the whole strategy has been to box him into a position where he has run out of space to say no.'

With Meacher rapidly losing credibility in the eyes of the environment movement, there is only the public left to persuade.

Those doing the persuading are a powerful bunch. Alongside the biotech industry, the Royal Society, the WTO, the prime minister and his science minister, another unlikely GM advocate has emerged. According to its website, the Food Standards Agency (FSA) 'is an independent food safety watchdog set up by an act of Parliament in 2000 to protect the public's health and consumer interests in relation to food'. Yet this same website has been criticised by the Soil Association for publishing 'highly-biased GM education material'.

In February the FSA announced its own programme to 'assess people's views of genetically-modified food'. Considering the government had already committed £500,000 to the same end, why did the agency feel the need to spend a further £120,000 of taxpayers' money on repeating the exercise? Critics of the FSA have dismissed its consultation process as a pro-GM exercise. Those critics are not just environmentalists; they include the Women's Institutes and the largest trade union in the country, Unison, among many others.

Furthermore, last month Genewatch UK director and AEBC member Dr Sue Mayer accused the FSA of hiding the unanimous verdict of its own Citizens Jury that GM



crops should not yet be grown commercially. Likewise, the FSA (along with the Labour government) has been criticised by consumer organisations for backing the US government/biotech position in opposing the EU's traceability and labelling regulations.

'There is no doubt inside the corridors of power,' says Simpson, 'that the agenda is effectively being driven by Sainsbury and the biotech corporations. It is being aided and abetted by the FSA, where [the agency's chair] Sir John Krebs is now unaffectionately known as "GM Joe".'

But in spite of appearances, those pushing to commercialise GM are powerless in the face of concerted public pressure. Three of the largest consumer organisations in the country – food and farming campaign Sustain, the Consumers' Association and the National Consumer Council – have all criticised the FSA for not listening to consumers. All the supermarkets have stated that they will not stock food that contains GM ingredients. And three county councils – Cornwall, South Gloucestershire and Warwickshire – have declared themselves GM-free. Now it's your turn to be heard. Join the debate. ■

*Andy Rowell is author of Don't Worry, it is Safe to Eat: the true story of GM food, BSE and foot and mouth – available at a special 15 per cent discounted price of £14.44 for Ecologist readers. Phone 01903 828 800, or fax 020 727 81142*

# UK Farm Scale Trials: Will They Prove Anything?

## Objective

The purpose of the trials is to test the following hypothesis: that there is no significant difference between the biodiversity associated with the management of GM winter/spring oilseed rape/maize tolerant to herbicides and comparable non-GM crops at the farm-scale.

## Methodology

- The Government-sponsored farm-scale trials have been conducted on three GM herbicide tolerant crops.

GM Crop	Tolerant to: herbicide (brand)	Crop and herbicide developed by
Forage (fodder)	glufosinate (Liberty)	Aventis
Spring oil seed rape	glufosinate (Liberty)	Aventis
Winter oil seed rape	glufosinate (Liberty)	Aventis
Sugar and fodder beet	glyphosate (Roundup)	Monsanto*

\*in partnership with Novartis

- For each crop there were supposed to be between 60 and 75 field trials over the course of the three year programme.
- Fields were planted across the UK in locations meant to reflect the range of farming practice and geographical distribution of each crop in the UK.
- Each trial site was divided into two. One half was planted with the non-GM crop grown with conventional weed control, the other with the GM crop and its associated herbicide.
- Scientists monitored the effect of the different herbicides on diversity and abundance in plants and insects.

## Critique of the UK Farm Scale Trials

From the outset the trials have been criticised by environmental organisations, local residents, and even the Government's GM watchdog, the Agriculture Environmental Biotechnology Commission (AEBEC).

### 1 No baseline data taken before trials began

A report by the Pesticide Safety Directorate, undertaken at the Government's request, highlights the lack of basic knowledge concerning the biodiversity of the crops being tested. The report concludes, 'it is not possible to make definitive statements as to the current biodiversity status of oilseed rape, sugar beet and maize fields.'

### 2 No monitoring of long term impacts

Crops will only be grown once in a field, meaning any effects of repeated growing will not be identified. If no significant differences are found in three years the crops will be given a clean bill of health. However, major changes may not become apparent until GM herbicide tolerant crops have been grown on the same farm over a prolonged period. For example, it took many years for the devastating effects of DDT on birds to be realised.

### 3 No investigation of effects on soil fungi, bacteria or earthworms

Given that microbes and earthworms are vital indicators of soil health, this is more than just an oversight. And the justification from the Scientific Steering Group, 'this does not mean that they (earthworms) are unimportant, rather that there are more suitable experimental

approaches which would address the issue of whether management of GM-modified (Sic) herbicide resistant crops affect earthworm diversity and soil functioning in general'. 'Suitable' or convenient... given that Roundup is already known to be toxic to earthworms.

### 4 Health risks not considered

In their report *Crops on Trial*, the AEBEC concluded that the Government had misled the public by implying the trials would provide adequate information to assess the safety of the crops.

### 5 Real farming conditions not reflected

One of the key benefits claimed for the use of GM maize is that farmers will use less atrazine (an EU 'Red List' herbicide suspected of hormone disrupting effects) because they will switch to using glufosinate. However, recent US reports reveal that 75-90 per cent of US maize farmers are returning to atrazine due to poor performance of the GM crop with glufosinate.

### 6 Inadequate geographic representation

For the final round of maize plantings, there should have been over 20 trials in the South West, the main area in which fodder maize is grown. However, only 11 trials actually took place there and ten of them were in Dorset – four in one village.

### 7 Inadequate regulation of the trials

- GM oilseed rape used in the farm scale trials was contaminated with seeds of a different GM oilseed rape, which contained an antibiotic resistant gene. The contaminated seeds had been used in the trials since 1999 without consent. It is not known how the contamination occurred, or why inspectors failed to detect the mix up earlier.
- In Germany sugar beet trials have to be netted to prevent animals removing the seed – this is not a requirement in the UK.
- A 1999 report by the John Innes Centre (a pro-GM science research organisation) said contamination of non-GM crops with GM pollen was 'inevitable'. Nonetheless, companies or farmers planting GM crops do not have to consult with neighbouring beekeepers, or even tell them that there is a GM crop nearby. And it is up to the beekeepers to test their honey for contamination.

### 8 No effort to promote sustainable farming

The trials make comparisons with intensive farming, itself very environmentally damaging, instead of more wildlife friendly farming, such as organic.

## Glufosinate ammonium (Liberty)

- Causes birth defects in experimental animals, causing premature cell death in the immature brain by a process called apoptosis.
- Prevents development of glutamate channels in the brain, disrupting cellular communication.
- Highly soluble in water and classified as persistent and mobile by the US Environmental Protection Agency.
- Little is known on general effects on wildlife but is toxic to several species of freshwater fish, daphnia and larvae of clams and oysters.
- Inhibits soil fungi and bacteria at realistic field rates of application, completely suppressing the activity of 40 per cent of soil bacteria and 20 per cent of soil fungi

## Glyphosate (Roundup)

- Reduces the growth of earthworms and increases their mortality.
- Toxic to many of the beneficial mycorrhizal fungi that help plants take up nutrients from soils.
- Can inhibit anaerobic nitrogen fixation in soil.
- Second most toxic of nine herbicides tested for toxicity to a range of soil bacteria, fungi, actinomycetes and yeasts.
- Linked to Non-Hodgkin's Lymphoma and has caused gene mutations and chromosomal aberrations in animal experiments.



Why are GM crops being grown, how are plants genetically modified, where is it being cultivated, who's in control and what is being researched and developed?

# Taking stock

Ninety-nine per cent of commercially grown GM crops have been engineered to exhibit just two traits – herbicide tolerance and insect resistance.

## Herbicide tolerance

The most common commercial GM crops are those that have been engineered to be tolerant to chemical weedkillers; they are referred to as being herbicide-tolerant (HT). These crops are created by introducing genes from bacteria that either allow plants to tolerate the effects of the weedkiller or which break it down into a non-toxic form. Herbicide tolerance is intended to make weed control easier for the farmer. It encourages the use of so-called broad-spectrum herbicides like glyphosate, which can kill the majority of green plants without damaging the GM crop.

HT crops made up 75 per cent of the global area under GM cultivation in 2002.

## Insect resistance

The second most common GM crops are those that are resistant to insect pests. These make use of a set of insecticidal toxins produced by the soil micro-organism *Bacillus thuringiensis* (Bt) and which act by binding to the gut of the insect that ingests them. In Bt crops the toxin gene from the bacterium has been inserted into the plant. When an insect pest feeds on the plant, the pest ingests a dose of the toxin and dies.

Pest-resistant crops made up 17 per cent of the global GM cultivated area in 2002.

Transgenic crop	Million hectares worldwide	Percentage of total
HT soya bean	36.5	62
Bt maize	7.7	13
HT canola	3	5
HT maize	2.5	4
Bt cotton	2.4	4
HT cotton	2.2	4
Bt/HT cotton	2.2	4
Bt/HT maize	2.2	4
<b>Total</b>	<b>58.7</b>	<b>100</b>

Source: James C. 200212

**1** A biochemical process is used to cut up strings of DNA and select the required genes.

**2** The selected genes are then inserted into circular pieces of DNA (known as plasmids) found in bacteria. Because the bacteria reproduce rapidly, thousands of identical copies of the 'new' gene are manufactured in a very short time.

**3** The 'new' gene is then inserted into the DNA of the plant that is to be engineered. Two principal methods are used to insert the gene:

a) a 'ferry' or 'vector' is made out of a piece of genetic material taken from a virus or a bacterium; this is then used to infect the plant and the new gene is thus 'smuggled' into the plant's DNA; or

b) the genes are coated onto a large number of tiny gold or tungsten pellets, which are then fired with a special gun into a layer of cells taken from the recipient plant; some of these pellets will pass through the nucleus of a cell and deposit their package of genes, which in certain cases will be integrated into the DNA of the plant's cells.

**4** As the success rates for both these methods is extremely low, the scientists have to find out which – if any – of the plant's cells have taken up the new DNA. So, before a gene is transferred a 'marker' gene is attached that is resistant to an antibiotic. The genetically-engineered plant cells are then grown in a medium containing this antibiotic, and the only ones able to survive are those that have taken up the new genes with the antibiotic-resistant marker attached.

**5** Finally, a piece of DNA taken from a virus or bacterium (called a 'promoter') is inserted with the new gene in order to 'switch' the gene on in its new host.

## Implications

- As it is not possible to transfer genes with any accuracy, gene transfer can disrupt an organism's tightly controlled network of DNA.

- Promoters often force the new genes to express their traits very aggressively. Not only does this have the potential to influence neighbouring genes, but it can also stimulate plants to produce higher levels of substances that may be harmless at low levels but which can become toxic in higher concentrations. The new gene could, for example, alter chemical reactions within the cell or it could disturb cell functions. This could lead to instability, the creation of new toxins or allergens and changes in nutritional value.

- Current understanding is extremely limited, and any change to the DNA of an organism at any point may well have knock-on effects that are impossible to predict or control.

## A tiny sample of unexpected results to date:

- A gene coding for red pigment was taken from a maize plant and transferred into petunia flowers. Apart from turning red, the flowers also had more leaves and shoots, a higher resistance to fungi and lowered fertility.

- In trials used to assess the safety of herbicide-resistant soya beans made by Monsanto, 36 cows were divided into different groups. For four weeks some were fed GM soya beans, and some were fed ordinary beans. When the data from the trials was examined, it was found that the cows that were fed the normal soya beans produced 1.19 kilograms of milk fat a day; whereas those fed with GM soya produced 1.29 kilograms – an increase of more than 8 per cent. This shows that a genetic change that was only intended to make a soya bean resistant to herbicide had unexplained side effects. No further tests were conducted to explore these changes, and the GM soya beans were passed by regulatory authorities as safe for consumption.

- In a trial of genetically-engineered insect-resistant maize, there was a yield reduction of 27 per cent and significantly lower levels of copper in the leaves, stalks and grain compared to the conventional plants;

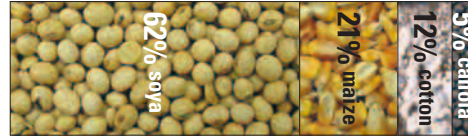
- In 1997 Oxford University scientists investigating the metabolism of potatoes unexpectedly found out how to use genetic engineering to increase the vegetable's starch content. The scientists were working on what they believed to be quite a different aspect of potato metabolism when they discovered that suppressing the activity of a particular enzyme dramatically affected the levels of starch produced within the potatoes. 'We were as surprised as anyone,' said professor Chris Leaver. 'Nothing in our current understanding of the metabolic pathways of plants would have suggested that our enzyme would have such a profound influence on starch production.'

- A yeast that was genetically engineered for increased fermentation purposes produced a toxin in concentrations 30 times higher than in non-GM strains.

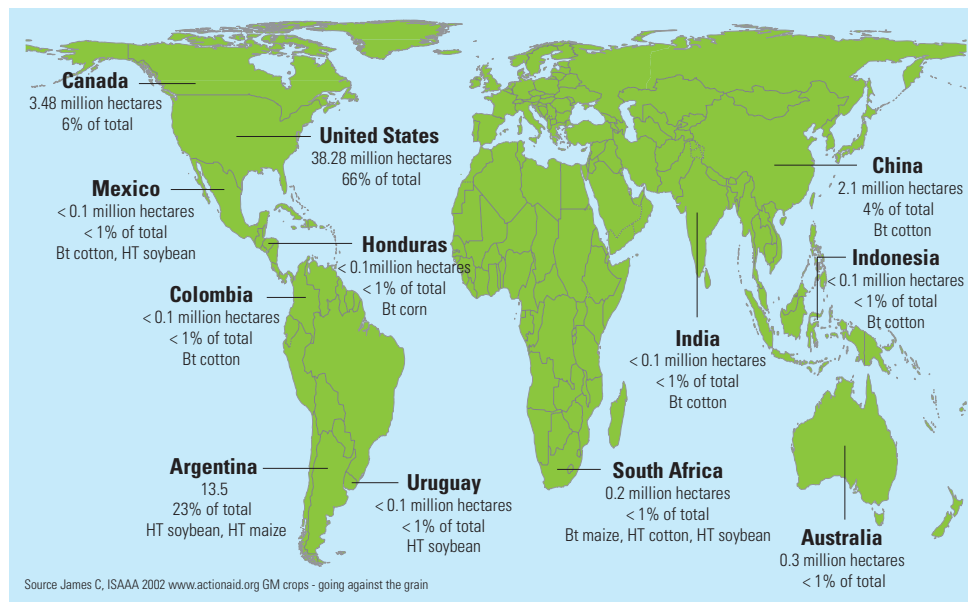
(Adapted from Genetic Engineering, Food and our Environment by Luke Anderson [Green Books, 1999])

The US, Canada, Argentina and China grew 99 per cent of the world's GM crops in 2002. South Africa and Australia accounted for most of the remaining 1 per cent, while a further 12 countries grew less than 50,000 hectares each (see map). In total, GM crops covered 58 million hectares of the world in 2002; that's an area two and a half times the size of the UK. The global market value for GM seeds in 2002 was estimated to be \$4.25 billion; that's 13 per cent of the global seed market.

The main GM crops now being grown commercially are:



With the exception of cotton, these crops are used primarily for animal feed. Soya and the vegetable oils derived from canola are used in processed foods.



The agricultural biotech industry is dominated by four multinational corporations: Syngenta, Bayer CropScience, Monsanto and DuPont. In 2001 these firms had a combined turnover from seeds and agrochemicals of \$21.6 billion.

Company	Agrochemical sales (\$ million)	Seeds/biotech sales (\$ million)	Total (\$ million)
Syngenta	5,385	938	6,323
Bayer Aventis	6,086	192	6,278
Monsanto	3,505	1,707	5,212
DuPont	1,922	1,920	3,842
BASF	3,114	0	3,114
Dow	2,627	215	2,842
Total	22,639	4,972	27,611

Source: AgriFutura (29), the newsletter of Phillips McDougall AgriService

## Implications

After a decade of consolidation in the 1990s the pesticide industry has a chemical, seed and technology empire that gives it access to farmers and markets around the world; and that gives farmers far less choice about their seed supplier and their seeds. By linking their chemicals to seeds via GM technologies, corporations have been able to protect and extend their markets for their herbicides and pesticides – many of the patents on which were previously due to expire.

- Six corporations based in the US and Europe controlled 98 per cent of the market for GM crops and 70 per cent of the world's pesticide market in 2000.
- Six firms own 54 per cent of US plant biotech patents.
- Ten supply 33 per cent of the global seed market; 20 years ago there were thousands of seed companies.
- Ninety-one per cent of all GM crops grown worldwide in 2001 were from Monsanto seeds.
- In Africa just three corporations – Syngenta, Monsanto and DuPont – now dominate the formal sector seed markets.
- In South Africa Monsanto has total control of the market for GM seed, 60 per cent of the hybrid maize market and 90 per cent of the wheat market.

Dozens of new GM crops are being developed or researched. These include crops genetically modified to produce pharmaceuticals. Open-field trials have taken place in California of GM rice containing human genes for drug production. Pharmaceutical wheat, corn and barley are also being developed in the US, France and Canada.

Disease-resistant crops and crops designed to tolerate drought or high salinity are also being researched. The biotech industry also promises nutritionally improved crops such as pro-Vitamin A enhanced rice (called 'Golden Rice') and oils that could, for example, lower cholesterol levels.

- It can cost anything from \$50m to \$300m to develop a GM crop from the laboratory to the market, and can take up to 12 years.
- Most research and development (R&D) in GM agriculture is conducted by the private sector. Six corporations account for almost 65 per cent of the world's total agricultural biotech R&D; they spent over \$1 billion on GM crop R&D in 1998.
- GM crops are planted almost exclusively by large commercial growers in rich and middle-income countries; less than 1 per cent of all GM R&D is estimated to be directed at resource-poor farmers.

GM applications appear to offer hope to the world's poor and hungry. Yet it is doubtful whether any of these applications will make it into the fields of farmers in the developing world – for two simple reasons:

- 1 The science of GM is young and complex, and each gene or trait explored in the discovery stage has odds of about one in 250 of making it to market
- 2 The commercial strategy of the biotech corporations is to increase the kinds of Bt and HT crops (GM wheat is next on the horizon) and to extend cultivation of these crops and traits to developing countries. Quite simply, GM crops that would 'benefit' the poor are not a commercial priority.

Crop trait	Proportion of approved crops (%)
Pest resistance	21.4
Herbicide resistance	48.2
Ripening	8.9
Bacteria-virus resistance	8.9
Sterility	8.9
Fat content/type	3.6
Starch content	0
Fungus resistance	0
Nutrition	0
Taste	0
Plant growth	0
Environmental stress	0
Flowering	0
Antibiotic resistance	0

Source: Harhoff D, Regibeau P & Rockett K, 2001

*The Ecologist* spells out the five overriding reasons why the commercialisation of GM crops should NEVER be allowed in the UK

# Keep Britain GM-free



## GM WILL REMOVE CONSUMER CHOICE

The UK government's official adviser on GM, the Agriculture and Environment Biotechnology Commission (AEBEC), has said it would 'be difficult and in some places impossible to guarantee' that any British food was GM-free if commercial growing of GM crops went ahead. In North America, farmers can no longer be certain the seed they plant does not contain GM genes.

### Cross pollination

GM genes are often 'dominant' – ie, they are inherited at the expense of non-GM genes when cross-pollination occurs between GM and conventional species. With the first GM crops considered for commercialisation – oilseed rape and sugar beet and maize – the 'gene flow' (ability to contaminate non-GM varieties) is 'high' and 'medium to high', respectively.

To prevent cross-pollination, the official advice in the UK is that there should be a separation distance of just 50 metres between GM oilseed rape and non-GM varieties. But pollen can travel a lot further than that. Bees, for example, regularly fly for up to 10 kilometres; hence, oilseed rape pollen has been found in hives 4.5 kilometres from the nearest GM crop field. Tree pollen grains have been recorded in the essentially treeless Shetland Isles, which are

For 40 years Percy Schmeiser grew oilseed rape on his farm in the Canadian province of Saskatchewan – usually sowing each crop with seeds saved from the previous harvest. Then one day Monsanto investigators found samples of the company's own genetically-engineered herbicide-resistant oilseed rape among Schmeiser's stock. Despite Schmeiser's insistence that GM seed from neighbouring farms growing the Monsanto crop must have contaminated his fields, the biotech giant said he was illegally planting its crops without paying a \$37-per-hectare fee. Monsanto took Schmeiser to court.

Amazingly, the judge ruled that 'the source of the [GM] oilseed rape... is really not significant for the issue of infringement'. Schmeiser was ordered to pay \$143,500 (the profits from his entire 1998 crop, which Monsanto claimed as its property) to Monsanto and \$250,000 dollars to the corporation's lawyers. On top of that, he had to spend \$160,000 on his own legal fees and another \$40,000 for labour while he was away from his farm. As a final insult, he was also ordered to hand over all his seeds – developed over half a century – to Monsanto. He continues to protest his innocence in the courts of appeal to this day.



250 kilometres from the nearest mainland. And the University of Adelaide has published research into wind pollination distances that shows oilseed rape pollen can travel for up to 3 kilometres.

### Seed mixing and spillage

- GM seed, or parts of GM root crops like sugar beet, may be shed and left in a field where they may grow later.
- Combine harvesters move from field to field, and leftover GM seed may be spilt if equipment is not cleaned properly.
- Lorries removing a harvested crop from a farm may spill seed near fields where non-GM or organic crops are grown.
- For crops with very small seeds like oilseed rape spillage can be high.

In May 2002 the European Commission's Joint Research Centre (JRC) echoed the AEBEC almost

verbatim when it warned that if GM crops were widely adopted, preventing contamination of organic food would be 'very difficult and connected to high costs, or virtually impossible'.

The biotech industry is fully aware of this. As Don Westfall, vice president of US food industry consultancy Promar International, says: 'The hope of the [GM] industry is that over time the market is so flooded [with GM] that there's nothing you can do about it. You just surrender.'

Likewise, the Soil Association's investigation into the impact of GM in the US concludes: 'All non-GM farmers in North

America are finding it very hard or impossible to grow GM-free crops. Seeds have become almost completely contaminated with GM organisms (GMOs), good non-GM varieties have become hard to buy, and there is a high risk of crop contamination.'





## HEALTH RISKS HAVE NOT BEEN DISPROVED

Pro-GM voices claim that after six years there have been no adverse health effects from eating GM foods in the US. But then, there has been no effort by the US authorities to look for health impacts either.

- Safety data comes from the biotech firms themselves. Independent, peer-reviewed research showing that GM food poses no danger to human health is not required. One Monsanto director said: '[We] should not have to vouchsafe the safety of biotech food. Our interest is in selling as much of it as possible.'

- 'Substantial equivalence'

The common methodology for government food-safety requirements in North America and Europe has traditionally been a comparison between a food and a conventional counterpart. The assumption is that existing foods have a long history of safe use. So, if a GM crop is found to be 'the same' as a non-GM counterpart, it can claim this history. This is called 'substantial equivalence'. But GM crops are not the same, because of the random nature and uncertain consequences of modification. Biotech firms acknowledge this when it suits them – stating, for example, that their GM varieties are distinctive enough to warrant their own patents.

- There have been no properly controlled clinical trials looking at the effects of short- or long-term ingestion of GM foods by humans. Moreover, as Dr Arpad Pusztai (who was sacked when he printed research about the effects of GM potatoes on lab rats) warns: 'There is increasing research to show they may actually be very unsafe.'

### Allergic reactions

Genetic modification frequently uses proteins from organisms that have never before been an integral part of the human food chain. Hence, GM food may cause unforeseen allergic reactions – particularly among children. Allergens could be transferred from foods to which people are allergic to foods they think are safe. When a new food is introduced, it takes five to six years before any allergies are recognised.

In 2000 GM 'StarLink' maize was found in taco shells being sold for human consumption in the US – even though the maize had only been approved for animal feed. StarLink is modified to contain a toxin that could be a human allergen; it is heat stable and does not break down in gastric acid – characteristics shared by many allergens.

### Antibiotic resistance

Genetic modification could also make disease-causing bacteria resistant to antibiotics. This could lead to potentially uncontrollable epidemics. Antibiotic-resistance genes are used as 'markers' in GM crops to identify which plant cells have successfully incorporated the desired foreign genes during modification.

A 2002 study commissioned by the UK's Food Standards Agency (FSA) showed that antibiotic-resistance marker genes from GM foods can make their way into human gut bacteria after just one meal (see box below). Two years previously, the British Medical Association had warned: 'The risk to human health from antibiotic resistance developing in micro-organisms is one of the major public health threats that will be faced in the 21st century.'

### Industrial and pharmaceutical crops

Since 1991 over 300 open-field trials of 'pharma' crops have taken place around the world. In California, for example, GM rice containing human genes has been grown for drug production. Pharmaceutical wheat, corn and barley are also being developed in the US, France and Canada.

Last year in Texas 500,000 bushels of soya destined for human consumption were contaminated with genes from maize genetically modified by the US firm Prodigene so as to create a vaccine for a stomach disease afflicting pigs. A major concern is that GM firms are using commodity food crops for pharmaceutical production. If there were such thing as a responsible path with 'pharma' GM it would be to use non-food crops.

In July 2002 the FSA commissioned the world's first-known human GM food trial. There were 19 volunteers involved, of whom seven used colostomy bags after having had their lower intestines removed. They were all given a meal that included GM soya, with each meal containing 3,000 billion copies of the (modified) transgene.

The researchers then analysed the volunteers' stools. Among those with no lower intestine, they found that 'a relatively large portion of GM DNA survived the passage through the small bowel' (up to 3.7 per cent of the total in one case – ie, 100 billion transgenes). No GM DNA was found among those with a complete intestine.

To see if the GM DNA might be transferring to bacteria as it passes through the gut, the researchers cultivated bacteria from the stools of colostomy-bag volunteers. In three of the seven samples they found that gut bacteria had taken up transgenic DNA. None of the bacteria sampled from the stools of subjects with intact intestinal tracts contained the transgene.

### Implications

The first part of the research shows that transgenic material is only fully degraded after it reaches the large intestine. The second part shows that gene transfer occurs between GM food and gut bacteria in the small intestine. These findings suggest the possibility of serious health problems with GM food. The FSA, which advises the nation on the safety of GMOs, completely ignored this. It chose to focus on the first part of the research, saying: 'In real-life conditions with human volunteers, no GM material survived the passage through the entire human digestive tract.' However, it is what happens to GM material before it is degraded that is important for health; whether transgenic material survives to leave the digestive tract is mainly an environmental issue.

As for the evidence of gene transfer, the FSA said: 'The likelihood of functioning DNA being taken up by bacteria in the human or animal gut is extremely low.' This is a complete misrepresentation of the study's findings.



## FARMERS WILL BE DESTROYED

Within a few years of the introduction of GM crops in North America the following occurred:

- almost all of the US's \$300m annual maize exports and Canada's \$300m annual rape exports to the EU disappeared;
- the trade for Canadian honey was almost completely destroyed because of GM contamination;
- Asian countries, including Japan and South Korea – the biggest foreign buyers of US maize, stopped importing North American maize;
- just like domestic consumers, food companies – including Heinz, Gerber and Frito-Lay – started to reject the use of GMOs in their products.

Former White House agriculture expert Dr Charles Benbrook calculates that the lost export trade and fall in farm prices caused by GM commercialisation led to an increase in annual government subsidies of an estimated \$3–5 billion.

In December 2000 the president of Canada's National Farmers Union, Cory Ollikka, said: 'Farmers are really starting to question the profit-enhancing ability of products that seem to be shutting them out of markets worldwide.'

Farm, which represents UK farmers, has said: 'Farmers are being asked by the agro-biotech companies to shoulder the economic and public-image risks of their new technology, for which there appear to be few or no compensating benefits. The claimed cost savings are either non-existent or exaggerated. The long-term health and environmental impacts are still uncertain. And consumers don't want to eat GM food. So why would farmers sow something they can't sell?'

The Soil Association's US investigations found that GM crops have *increased* the cost of farming and *reduced* farmers' profits for the following reasons:

- GM varieties increase farmer seed costs by up to 40 per cent an acre; GM soya and maize, which make up 83 per cent of the GM crops grown worldwide, 'deliver less income on average to farmers than non-GM crops';
- GM varieties require farmers to pay biotech firms a 'technology fee';
- the GM companies forbid farmers to save their seeds for replanting; contrary to traditional practice, farmers have to buy new seed each year; and
- GM herbicide-tolerant crops increase farmers' use of expensive herbicides, especially as new weed problems have emerged – rogue herbicide-resistant oilseed rape plants being a widespread problem; contrary to the claim that only one application would be needed, farmers are applying herbicides several times.

Even a 2002 report by the US Department of Agriculture, a key ally of the biotech industry, admitted that the economic benefits of cultivating GM crops were 'variable' and that farmers growing GM Bt corn were actually 'losing money.'

- The University of Nebraska recorded yields for Monsanto's Roundup Ready GM maize that were 6-11 per cent less than those for non-GM soya varieties. A 1998 study of over 8,000 field trials found that Roundup Ready soya seeds produced between 6.7 and 10 per cent fewer bushels of soya than conventional varieties.

- Trials by the UK's National Institute of Agricultural Botany showed yields of GM oilseed rape and sugar beet that were 5-8 per cent less than conventional varieties.

Adopting GM crops would place farmers and the food chain itself under the control of a handful of multinational corporations such as Monsanto, Syngenta, Bayer and DuPont. For US farmers this has meant:

- legally-binding agreements that force

farmers to purchase expensive new seeds from the biotech corporations each season;

- having to buy these corporations' herbicides (at a cost considerably above that of a generic equivalent) for herbicide-tolerant crops;
- paying the biotech firms a technology fee based on the acreage of land under GM;
- the development of so-called 'traitor technology' crops on which particular chemicals will have to be applied if the crops' GM characteristics (such as their time of flowering or disease resistance) are to show;
- the invention of 'terminator technology' that stops GM plants producing fertile seeds; thus farmers are physically prevented from sowing saved seed and have to buy new seed from the biotech firms instead; and
- biotech firms buying up seed companies. This creates monopolies and limits farmers' choices still further. DuPont and Monsanto are now the two largest seed companies in the world. As a result of their control of the seed industry, farmers are reporting that the availability of good non-GM seed varieties is rapidly disappearing.





US farmers are obliged by their contracts to allow biotech company inspectors onto their farms. As with all crops, leftover seed from GM plants can germinate in fields since used to grow different crops; the seeds produce so-called 'volunteers'. If biotech company inspectors find any such plants, they can claim – and have repeatedly done so – that the farmers are growing unlicensed crops and infringing patent rights. For example, David Chaney, who farms in Kentucky, had to pay Monsanto \$35,000; another Kentucky farmer agreed to pay the firm \$25,000; and three Iowa farmers are on record as having paid it \$40,000 each. These and other farmers have also had to sign gagging orders and agree to allow Monsanto complete access to their land in subsequent years. Crops have also been destroyed and seed confiscated. The biotech industry currently has legal actions pending against 550 farmers in North America.

Internationally, the organic movement has rejected GM because of its potential for genetic contamination and its continued reliance on artificial chemicals.

The Soil Association reports that in

North America 'many organic farmers have been unable to sell their produce as organic due to contamination'.

Contamination has already:

- meant the loss, at a potential cost of millions of dollars, of almost the entire organic oilseed rape sector of Saskatchewan;
- cost US organic maize growers \$90m in annual income (the losses were calculated by the Union of Concerned Scientists in an analysis for the US Environmental Protection Agency); and
- forced many organic farmers to give up trying to grow certain crops altogether.

Last month a survey by the Organic Farming Research Foundation found that one in 12 US organic farmers had already suffered direct costs or damage because of GM contamination.

If commercial planting of GM crops took place in Britain, the UK's burgeoning organic sector – now worth £900m, and set to increase with (supposed) government support – would perish. If, by some miracle, contamination could be avoided the costs involved would inevitably lead to organic farmers going bust. A study published by the JRC in May predicted that efforts to protect conventional and organic crops from contamination would add 41 per cent to the cost of producing non-GM oilseed rape and up to 9 per cent to the cost of producing non-GM maize and potatoes.

Because of all these problems many US farm organisations, such as the American Corn Growers Association (ACGA), are urging farmers to plant non-GM crops from 2002. Along with the US and Canadian national farmers' unions, the Canadian Wheat Board (CWB), various organic farming groups and more than 200 other assorted organisations, the ACGA is also lobbying for a ban or moratorium on the introduction of the next major proposed GM food crop – GM wheat.

The CWB – the world's largest seller of wheat – has asked Monsanto to withdraw its application for approval of GM wheat, stating there are 'no benefits for farmers'. A spokesman for the board said: 'Economic harm could include lost access to premium markets, penalties caused by rejected shipments, and increased farm-management and grain-handling costs.' As there are thresholds for the amount of GM content conventional foods can include before they have to be labelled as 'GM' (currently 1 per cent in the UK, although the European Parliament is pushing for a 0.5 per cent ceiling), conventional farmers whose crops are contaminated could find themselves unable to sell their produce. Most UK food producers and supermarkets, for example, will not accept GM ingredients.

If any environmental, consumer-health or economic damage does result from GMOs, neither the US nor the EU has legislation in place that would make the biotech firms liable. Instead, the existing liability laws make the non-GM grower liable for the costs of GM contamination. Moreover, insurance companies – including the NFU Mutual (the best-known farmers' insurance company) – are refusing to provide insurance to GM producers or farmers; were any damage to occur, taxpayers would almost certainly foot the bill, legal battles would ravage the countryside and farmer would be set against farmer.

If a non-GM or organic farmer faced economic losses through GM contamination, they would not be able to claim compensation; the loss is said to 'lie where it falls'. And to cap it all, Monsanto's new contracts with farmers stipulate that if something does go wrong with their GM crop the farmers cannot sue Monsanto for damages.



## THE ENVIRONMENT WILL SUFFER

The proponents of GM argue that the technology will lead to a reduction in the use of chemical weedkillers. But for the majority of GM crops grown so far, the evidence does not bear this out.

- Four years worth of data from the US Department of Agriculture shows herbicide use on Roundup Ready soya beans is increasing.
- In 1998 total herbicide use on GM soya beans in six US states was 30 per cent greater on average than on conventional varieties.
- The Soil Association's US investigation found that 'the use of GM crops is resulting in a reversion to the use of older, more toxic compounds' such as the herbicide paraquat.

### Why?

• Genes modified to make crops herbicide-resistant can be transferred to related weeds, which would then also become herbicide-resistant.

• Crops can themselves act like weeds. Because GM crops are designed to have a greater ability to survive, leftover seeds can germinate in later years when a different crop is growing in the same field. The leftover volunteer plants would then



contaminate the new crop. In Canada, where GM herbicide-tolerant oilseed rape has been grown since 1998, oilseed rape weeds resistant to three different herbicides have been created. These oilseed rape weeds are an example of 'gene-stacking' – the occurrence of several genetically-engineered traits in a single plant. Gene-stacking was found in all 11 GM sites investigated in a Canadian ministry of agriculture study. As professor Martin Entz of Winnipeg's University of Manitoba observes, 'GM oilseed rape is absolutely impossible to control'.

- Following a review of the Canadian experience, English Nature – the UK government's advisory body on biodiversity – predicted: 'Herbicide-tolerant gene-stacked volunteers of oilseed rape would be inevitable in practical agriculture in the UK.'

There has also been an increase in pesticide use by farmers attempting to cope with pest resistance created by GM Bt crops. Bt crops are modified to produce the insecticidal toxin *Bacillus thuringiensis* (Bt) in all their tissues.

However, the World Bank says insects can adapt to Bt within 'one or two years'. And scientists at China's Nanjing Institute of Environmental Sciences have concluded that if it was planted continuously Bt cotton would probably lose all its resistance to bollworm – the pest it is designed to control – within eight to 10 years.

Meanwhile, pests' adaptability to pest-resistant GM crops could force farmers onto a 'genetic treadmill' of ever more technical biotech fixes (including new varieties of pest-resistant crops) and more frequent spraying, and more toxic

doses, of chemical pesticides. It could also destroy the effectiveness of Bt as a natural insecticide in organic agriculture.

Perversely, GM pest-resistant crops could make agriculture more vulnerable to pests and disease; they could end up harming beneficial soil micro-organisms and insects like ladybirds and lacewings that keep certain pest populations in check.

The Delhi-based Research Foundation for Science, Technology and Ecology found in a

study of four Indian states that 'not only did Monsanto's Bt cotton not protect plants from the American bollworm, but there was an increase of 250-300 per cent in attacks by non-target pests like jassids, aphids, white fly and thrips'. And researchers at Cornell University in the US found that the pollen from Bt corn was poisonous to the larvae of monarch butterflies.

As GM 'pest-resistant' crops fail to deliver, Australian farmers have been advised to spray additional insecticide on Monsanto's Bt cotton by the Transgenic and Insect Management Strategy Committee of the Australian Cotton Growers Research Association. Overall insecticide applications on Bt maize have also increased in the US.

GM crops may also reduce the diversity of plant life by contaminating their wild relatives and indigenous crop varieties in areas where the crops evolved.

Widespread GM contamination of conventional maize has already been detected in Mexico. In Europe, contamination of wild relatives of oilseed rape and sugar beet is considered inevitable if GM commercialisation goes ahead. The same applies to wild relatives of rice in Asia.

### Implication

If wildlife is harmed 'unexpectedly' (ie, without that harm having officially been predicted), and an official risk assessment had not previously decided that GM crops were safe, it is the state and society that will have to pay for putting things right – if this is possible.



## GM CROPS WILL NOT FEED THE POOR

The idea that GM will end global poverty is probably the biggest of all the GM apologists' lies – the one used to accuse anti-GM campaigners in rich countries of not caring about the Third World. The truth is that the introduction of GM crops into the developing world will result in decreased yields, crop failures and the impoverishment of literally billions of small farmers.

As already stated on page 36, there is no evidence that genetic modification increases yields. But, just to make the point, consider the following:

- a US Department of Agriculture report published in May 2002 concluded that net yields of herbicide-tolerant soya bean were no higher than those of non-GM soya, and that yields of pest-resistant corn were actually lower than those of non-GM corn;
- in September 2001, the state court of Mississippi ruled that a Monsanto subsidiary's 'high-yielding' GM soya seeds were responsible for reduced yields obtained by Mississippi farmer Newell Simrall; the farmer was awarded damages of \$165,742.

But then, no commercial GM crop has ever been specifically engineered to have a higher yield.

Crop failures (and, therefore, drastically reduced yields) have already occurred with GM soya and cotton plants in the developing world. This is largely due to the unpredictable behaviour of these crops. GM

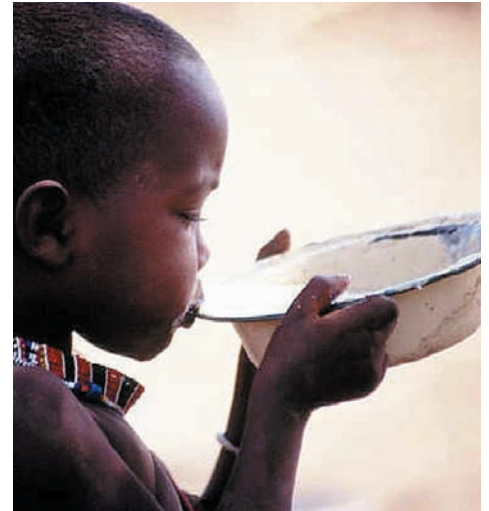
soya's brittleness, for example, has made it incapable of surviving heat waves. And in 2002 'massive failure' of Bt cotton was reported in the southern states of India; consequently, in April the Indian government denied Monsanto clearance for the cultivation of its Bt cotton in India's northern states.

GM would force the two billion people who manage the developing world's small family farms to stop their age-old practice of saving seeds. Each year they will have to buy expensive seeds and chemicals instead. The experience of North American farmers shows that GM seeds cost up to 40 per cent more than non-GM varieties.

Inadequate yields are not the cause of hunger today. As Sergey Vassetsov, a biotech industry analyst with investment bank Lehman Brothers, says: 'Let's stop pretending we face food shortages. There is hunger, but not food shortages.' In 1994, food production could have supplied 6.4 billion people (more than the world's actual population) with an adequate 2,350 calories per day. Yet more than 1 billion people do not get enough to eat.

Furthermore, the type of GM crops being produced are almost exclusively for the processed-food, textiles and animal-feed markets of the West. Instead of being used to grow staple foods for local consumption, millions of hectares of land in the developing world are being set

aside to grow GM corn, for example, to supply grain for pigs, chicken and cattle. In May, ActionAid published a report called *GM Crops: going against the grain*, which revealed that 'only 1 per cent of GM research is aimed at [developing] crops [to be] used by poor farmers in poor countries'. And ActionAid calculates that those crops 'stand only a one in 250 chance of making it into farmers' fields'. As the UN Development Programme points out, 'technology is created in response to market pressures – not the needs of poor people, who have little purchasing power'.



Sustainable agriculture projects have led to millet yields rising by up to 154 per cent in India, millet and sorghum yields rising by 275 per cent in Burkina Faso and maize yields increasing by 300 per cent in Honduras. Combined with reforms aimed at achieving more equitable land ownership, protection from subsidised food imports and the re-orientation of production away from export crops to staple foods for local consumption, sustainable farming could feed the world.

In 1998 a delegation representing every African country except South Africa submitted a joint statement to a UN conference on genetic research. The delegates had been inspired by a Monsanto campaign that used images of starving African children to plug its technology. The statement read: 'We strongly object that the image of the poor and hungry from our countries is being used by giant multinational corporations to push a technology that is neither safe, environmentally-friendly nor economically beneficial to us. We do not believe that such companies or gene technologies will help our farmers to produce the food that is needed in the 21st century. On the contrary, we think it will destroy the diversity, the local knowledge and the sustainable agricultural systems that our farmers have developed for millennia, and that it will undermine our capacity to feed ourselves.'

Sources: Briefing papers by Genewatch, Friends of the Earth, the Soil Association, GM Free Wales, Farm

# What you can do

Public pressure can keep Britain GM free. The most effective mechanisms are:

### GM PUBLIC DEBATE

Write or email the steering board expressing your own opinions:

GM Debate Steering Board, Bay 479,  
1 Victoria Street, London SW1 OET  
Tel 020 7215 6508  
[www.gmnation.org.uk](http://www.gmnation.org.uk)

Your views will be posted on the debate website.

Attend meetings in your own area or hold your own meetings to raise awareness in your community. Check the public debate website for meeting minutes, dates and venues.

### LOCAL COUNCILS

Cornwall, South Gloucestershire, and Warwickshire have already declared themselves GM-Free. Contact your local council and ask it to do the same in your county.

Find out how to phone, email or write to your local council at the Friends of the Earth Website:  
[www.foe.co.uk/campaigns/real\\_food/press\\_for\\_change/email\\_la/index.shtml](http://www.foe.co.uk/campaigns/real_food/press_for_change/email_la/index.shtml)

### FOOD STANDARDS AGENCY

Contact the Food Standards Agency and complain about their pro-gm stance as well as their continued vilification of organic food. Remind them that they are supposed to be an organisation concerned with protecting the public's health.

Write to: Barbara Richards, FSA complaints co-ordinator, Food Standards Agency, Aviation House, 125 Kingsway, London WC2B 6NH  
Tel: 020 7276 8610  
Email: [barbara.richards@foodstandards.gsi.gov.uk](mailto:barbara.richards@foodstandards.gsi.gov.uk)



### SUPERMARKETS

Let your local supermarkets know that you will boycott them if they stock GM products (even if you don't go there anyway). All the major supermarkets' websites provide opportunities for you to express your opinions. You can also fill in a complaints card in store.

**CO-OP** Martin Beaumont, Chief Executive  
Co-Op, PO Box 53, New Century House,  
Manchester M60 4ES.  
Email: <http://www.coop.co.uk/fscontactsall.htm>  
Call: 0161 834 1212

**MARKS AND SPENCER** Roger Holmes, Chief Executive  
Marks & Spencer, 47 Baker St, London W1U 8EP  
Email through website at [www.marksandspencer.com](http://www.marksandspencer.com).  
Customer Services: 020 7268 1234 or 0845 609 0200

**MORRISONS** Ken Morrison, Chairman  
Wm Morrison Supermarkets plc,  
Hilmore House, Thornton Road, Bradford BD8 9AX  
Call: 01924 870000  
website: [www.morrisons.plc.uk](http://www.morrisons.plc.uk)

**SAFeway** Carlos Criado-Perez, Chief Executive,  
Safeway plc, 6 Millington Road, Hayes,  
Middlesex UB3 4AY  
Email via website: [www.safeway.co.uk](http://www.safeway.co.uk)  
or direct at: [feedback@safeway.co.uk](mailto:feedback@safeway.co.uk)  
Tel: 01622 712000 or call their customer help line on 01622 712987 (lines open Monday to Friday 8am-5.15pm).

**SAINSBURYS** Sir Peter Davis, Group Chief Executive  
Sainsbury's, 33 Holborn, London, EC1N 2HT.  
Email Sainsbury's from their website:  
<http://www.sainsburys.co.uk/contactus/main.asp>  
Customer Services on freephone 0800 636262.

**SOMERFIELD** John von Spreckelsen, Chief Executive  
Somerset Stores Ltd, Somerset House,  
Whitchurch Lane, Bristol BS14 0TJ  
Email Somerset from their website:  
[www.somerfield.co.uk/site/contact/feedback/index.asp](http://www.somerfield.co.uk/site/contact/feedback/index.asp)  
Tel: 0117 935 6669

**TESCO** Terry Leahy, Chief Executive,  
Tesco, Tesco House, PO Box 18, Delamare Road,  
Cheshunt, Herts EN8 9SL.  
Email at: [customer.services@tesco.co.uk](mailto:customer.services@tesco.co.uk).  
Call customer services freephone 0800 505555

**WAITROSE** Steve Esom, Managing Director,  
Waitrose Ltd, Doncastle Road, Southern Industrial  
Estate, Bracknell, RG12 8YA  
Email at: [customer\\_service@waitrose.co.uk](mailto:customer_service@waitrose.co.uk)  
Call: 01344 825232 or By Freephone: 0800 188 884

### Genetic Engineering, Food and the Environment

Luke Anderson, Green Books 1999, £3.99,  
ISBN 1870098781

Highlights the many issues related to the human, political, and environmental implications of genetic engineering. Contains a very useful directory of campaigning organisations too.

### Genetic Engineering - Dream or Nightmare?

Mae-Wan Ho, Continuum 2000, £14.99,  
ISBN 0826412572

Widely acknowledged as providing the most sustained and reasoned challenge to many of the scientific assumptions underlying genetic modification.

### Genetic Engineering and You

Moyra Bremner, Harper Collins 1999, £6.99  
ISBN 0006531903

Accessible, comprehensive and engaging. Moyra Bremner writes clearly on the technology of GM; the corporations behind GM; and the widespread implications of growing GM. This book is an invaluable primer on a science that cannot be left to scientists.

### NORFOLK GENETIC ENGINEERING NETWORK <http://ngin.tripod.com/gmintro.htm>

The place to go for regular GM news. The above link leads to an excellent introduction to the science, written by geneticist Dr Michael Antoniou, among others.

### GENEWATCH UK

[www.genewatch.org](http://www.genewatch.org) tel 01298 9871898

A group aiming to ensure that genetic technologies are developed and used in the public interest, in a way which protects the environment and human health.

### NERAGE

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

Aims to centralise the tremendous volume of news and information on biotechnology. Users can submit items in a very similar way to indymedia sites.

### GENETICS ACTION

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

Provides 'information for action'. Specialising in putting individuals in touch with different national and international campaigns. Offers practical support, e.g. how to set up a campaign in your area, ideas for protests and things you can do if you don't have much time to spare.



# An Investment Providing Positive Social Benefits for its Employees and the Community

Floresteca, the company which manages the teak plantations in which QUADRIS invests, employ 660 people, making them the second largest employer in the region.

In addition to its key environmental principles, the social considerations of all Floresteca's employees are paramount. As well as paying wages over and above the statutory minimum, together with social security contributions and healthcare expenses, Floresteca provide numerous additional services and facilities for the community including:

- Schools and Literacy Classes
- Sports and Leisure Facilities
- Community Transport
- First Aid Training
- Medical Services and Facilities
- Health and Hygiene Infrastructure

The provision of such a rich social infrastructure is exceptional for a company of this size in a tropical region and provides increased employee security and motivation, ultimately resulting in increased productivity and security.

For more information on this positively ethical investment opportunity, contact us, or ask your Independent Financial Advisor to obtain details for you.



QUADRIS Environmental Investments Ltd.  
Regent House  
19-20 The Broadway  
WOKING, Surrey, GU21 5AP  
Tel: 01483 756800 Fax: 01483 776800  
invest@quadrisk.co.uk www.quadrisk.co.uk

**BATS • Why use expensive, damaging pesticides to kill insects?**

**The humble bat will happily eat 1,200 an hour for free**

The West Bengal government is looking to bats to check the menace of mosquitoes in Calcutta. After consulting environmentalists for an alternative to conventional solutions, it has decided to establish bat farms around the city.

West Bengal forest minister Jogesh Barman said: 'Common insecticides and mosquito-repellent oil and smoke did not help much. Rather, they gave rise to pollution. Now we have given a go-ahead to the proposals for setting up bat houses.'

Environmental campaigners had been complaining against the increasing use of chemicals as mosquito repellents in the city.

Experts agree that bat farming could be a very effective way of killing the mosquitoes. 'In a medium-sized bat house there will be at least 2,000 bats, and they can finish off at least 6 million mosquitoes every day,' said the environmentalist and former High Court judge Bhagabati Prasad Banerjee. 'It would be the fastest way to finish off the mosquitoes in a non-hazardous way.'

**BATS LOVE INSECTS**

Depending on the species, a single bat can consume between 500 and 1,000 mosquitoes in a single hour. And a bat colony? In Florida a colony of 30,000 southeastern bats (*Myotis austroriparius*) was estimated to have consumed upwards of 50 tons of insects annually – including over 15 tons of mosquitoes.

**BATS VS PESTICIDES**

Hickory shuckworm larvae were damaging more than 30 per cent of the crop at Frank and Teresa Bibin's organic pecan orchard in Georgia in the US. It is a problem not encountered by conventional growers, who are happy to spray pesticides six times a year to control shuckworms.

Searching for non-chemical alternatives, the Bibins joined the Bat House Research Project and built their first bat nursery house in July 1996. Fewer shuckworm moths were seen that year and the pecans suffered less crop damage from the larvae.

The Bibins plan to add larger roosting boxes that will hold up to 1,800 bats each. 'Once we get those numbers, I believe we'll really see a difference,' Frank explains. 'Most of the insect pests on pecans are caterpillars – the larval stage of moths. The bats are going after the moths, and our crop pests have already dropped off dramatically. I would tell other growers to try it – it works without a doubt.'

**BAT MYTHS**

**Bats are blind**

In fact, all bats have eyes and can see – some better than us. In addition, most species use a very sophisticated sonar system known as echolocation; the animals emit high-frequency calls out of their mouths or noses, and are able to form pictures in their brains from the echo bounce-back. Echolocation enables bats to comfortably move around at night, avoid predators, manoeuvre around obstacles, locate food and capture insects in total darkness.

**Bats have rabies**

Yes, they can contract rabies, but less than half of a per cent of the almost 1,000 different species of bat actually have rabies. They do not carry the disease; they become infected and die just as humans do.

**Bats suck blood**

There are only three species of South and Central American vampire bats that feed on blood. They do not actually suck blood; they make a small incision with their razor-sharp teeth and lap up the blood like a dog drinking water from a bowl.

**Bats are related to rodents**

The orthodox view is that bats are a distinct mammalian order, the chiroptera, that can be divided into two sub-orders. The large fruit bats and flying foxes are classified as megachiroptera, while the others – the small insect-eating bats or vampires – are microchiroptera.

**BATS IN NUMBERS**

- 1** hour is all it takes for a single brown bat to catch 1,200 mosquito-sized insects
- 200** tons of insects are eaten every night by the 20 million Mexican free-tail bats that live in Bracken Cave, Texas
- 6** feet; the wingspan of the largest bats in the world – the giant flying foxes (*Pteropus vampyrus*) that live in Indonesia
- 35** percentage of India's health budget (itself only 1.7 per cent of GDP) currently spent on malaria control each year
- 3** million cases of malaria are reported each year in India
- 3** million severe poisoning cases and 220,000 deaths are caused by pesticides each year, the WHO reports

The world's smallest mammal is the bumblebee bat of Thailand. It weighs less than a penny.

Fishing bats have echolocation so sophisticated that they can detect a minnow's fin as fine as a human hair protruding only two millimetres above a pond's surface.

African heart-nosed bats can hear the footsteps of a beetle walking on sand from a distance of more than six feet.

Vampire bats adopt orphans and have been known to risk their lives to share food with less fortunate roost-mates.

Bat droppings in caves support whole ecosystems of unique organisms, including bacteria that can be used to detoxify wastes, improve detergents and produce gasohol and antibiotics.

An anticoagulant from vampire bat saliva may soon be used to treat human heart patients.

Tiny woolly bats in West Africa live in the large webs of colonial spiders.

Disc-winged Latin American bats have adhesive discs on their wings and feet that enable them to live in unfurling banana leaves and walk up window panes.

Bats are exceptionally vulnerable to extinction, in part because they are the slowest reproducing mammals of their size on earth. Most produce only one offspring a year.

Tequila is produced from agave plants, the seed production of which drops to 1/3,000 of its optimum level without bat pollinators.







# Double

# jeopardy

**Y**ou're sitting at your desk at the International Monetary Fund, absent-mindedly rocking your latest executive toy back and forth, when someone presents you with a problem. Ecuador is badly in debt, \$15 billion at the last count. Yet the country itself is incredibly rich in indigenous species, unique rainforest and your favourite natural resource – oil.

Simple, you say, drill for oil and let the exports pay off the debt. Tried it already, comes the reply. Caused a right mess. In the early 1970s Texaco constructed the Sote pipeline. Controlled since 1992 by the Ecuadorian government, the pipeline has experienced 68 oil spills with millions of gallons of crude oil escaping into the environment. Some 2.5 million acres of rainforest were lost due to Texaco's operations. Today there are at least 350 toxic waste pits, and cancer rates are exploding.

A tricky problem. But then you don't get to work at the IMF (with all the expense accounts and glamorous first-class travel it entails) by being fazed by 'a tricky problem'. You close your eyes, hold the tips of your fingers to your lips for a second and then, lowering your hands, you look up with a smile.

'We'll double oil production capacity'. Before your subordinates can take in the genius of your suggestion you add: 'And we'll build another pipeline.'

Your young acolytes look on in awe, but you're on a roll now; nothing can stop you. 'Yes,' you say. 'A new pipeline. In a different place. With new roads. We'll need

to give the project a dramatic name. How about the "Economic Transformation Law"?'

The acolytes are excited now. Unable to contain himself, one of them asks if he can make a suggestion. All eyes turn.

'It's just that all this is going to take an awful lot of money to build,' he says. 'And then all the oil... well, there's a lot of money there, too. I was wondering whether we should make it a part of the Economic Transformation Law to require the government to open up all the sectors in the country's oil development industry to private corporations.'

The upstart shows promise. You smile in assent.

## Pipe dreams?

Unfortunately, that is very much what happened. In February 2001, the Ecuadorian government signed a contract with an international consortium for the construction, ownership and operation of a new pipeline called OCP or *Oleoducto de Crudos Pesados* ('Heavy Crude Pipeline'). The IMF insisted that 80 per cent of Ecuador's new oil earnings must be used to service the country's debt (with another 10 per cent going into a fund to hedge against fluctuations in the price of oil).

Due for completion in June, the pipeline will transport heavy crude from the country's Amazon rainforest region to the Pacific Coast – placing fragile ecosystems and dozens of communities along the 300-

mile route in jeopardy. The route traverses seven national parks and protected areas, including a World Bank Global Environment Facility biodiversity reserve. Critics argue that the inevitable ruptures in the OCP will cause ecological disaster by spilling more oil into forest ecosystems than the existing Sote oil pipeline. The latter has been ripped apart countless times – by landslides, earthquakes, volcanic eruptions and insurgent bombings.

Furthermore, the damaging impacts of the new pipeline will be felt far beyond the immediate route. To meet the IMF's demand to double current oil production, Ecuador must embark upon an unprecedented wave of new oil exploitation in vast areas of Amazon frontier forest. There are plans to build hundreds of new oil wells and associated processing plants, roads and pipelines in the country's last remaining old-growth rainforests and territories of isolated indigenous peoples. Having seen the ruin of indigenous communities in major oil-producing regions in the northern Ecuadorian Amazon, many of these peoples have vowed never to permit oil development on their land. In Ecuador's northern Amazon toxic contamination by oil companies has caused some of the highest rates of cancer in the country, basic services and infrastructure are lacking, and malnutrition, prostitution and violent crime rates are among the highest in Ecuador.

A dramatic increase in oil production will also further affect the communities living alongside the country's principal oil refineries in the coastal province of Esmeraldas. Thanks to the constant air, water and soil contamination from the refineries, these communities – the majority of which are Afro-Ecuadorian – already have some of the country's highest rates of cancers and respiratory, skin and stomach ailments.

### Waves of protest

The new pipeline has been riddled with problems since construction began in 2001. In January 2002, residents of the Mindo Nambillo Cloudforest Reserve staged a peaceful tree-sit on a remote ridge-top to prevent pipeline construction through the area. After two months the protesters were brutally evicted.

In the Amazon provinces of Orellana and Sucumbios, residents protested the pipeline through general strikes and numerous direct action initiatives to blockade project machinery. Local farmers also denounced damage to their crops, grazing lands and water supplies.

In August 2002 the controversy forced former OCP president Hernan Lara to resign.

The next month a report on the pipeline written by Robert Goodland, the former chief of the World Bank's Environment Department, was released. It found substantial non-compliance with World Bank environmental and social criteria; failings included threats to biodiversity, risks to indigenous peoples

and the forced resettlement of affected populations. Yet Westdeutsche Landesbank, whose \$900m, 17-year loan makes it the OCP's main backer, has publicly stated that compliance with World Bank environmental guidelines is an 'indispensable condition of any engagement' with the OCP. The same month, the Energy Intelligence Group drew attention to a \$180m tax dispute between OCP and the Ecuadorian government.

A month later Moody's (one of the two financial rating agencies for the project) downgraded the OCP's investment rating to borderline junk status – citing growing environmental, political and economic risks.

Then, on November 7, 2002, two World Bank vice-presidents wrote to OCP, requesting that it should either stop claiming compliance with World Bank standards or obtain independent verification of compliance. This has so far not occurred. The same month, the Mindo Nambillo tree-sitters reoccupied their former site – now their own recently-purchased private property – only to be evicted again and arrested by security forces.

On April 7 this year the existing Sote pipeline snapped and began to leak crude directly into the Sucus-San Juan River, a feeder river to Ecuador's Papallacta Lagoon. Two days later workers from the state oil firm PetroEcuador were still struggling to stop the flow of crude from the pipeline. By then, up to 10,000 barrels of oil had entered this fragile mountain environment, covering half the lagoon with a black stain and threatening the capital city's water supply. The OCP consortium denied responsibility for the accident but PetroEcuador is certain that the constant passage of OCP heavy machinery impacted the pipe, moving it from its course and stressing the metal beyond endurance.

Finally, in mid-April 2003 Moody's withdrew the OCP's credit rating altogether – thereby threatening further pipeline work on insurance grounds. But still the construction continues. Now, only the most concerted pressure can stop this seemingly inevitable disaster. ►

- Although comprising just 0.2 per cent of the planet's land area, Ecuador is estimated to contain 10 per cent of all its known species.
- In May 2000 an Environmental Impact Assessment (EIA) of the new pipeline was carried out by a company called Entrix Ecuador. The Entrix president is OCP's environmental co-coordinator. A team of local and international scientists specialising in Ecuador's biodiversity dismissed the EIA as inadequate. The EIA never fully assessed or disclosed the full long-term impacts of the pipeline on ecologically and culturally sensitive areas – including the oil production areas that would effectively be opened up to exploitation.
- Some of the political violence across the border in neighbouring Colombia could spill over into Ecuador. This could have severe environmental consequences. The existing Sote pipeline has already been sabotaged several times. In an incident in 2000, eight passers-by were killed and another 19 were injured.

# Pipeline to disaster



## A PIPELINE TO DISASTER

The route of the new pipeline starts at Lago Agrio in the eastern Amazon basin, where the Terminal Amazonas oil installation is to be built. From there it runs for 314 miles over the geologically unstable Andes to refineries at Balao near the port of Esmeraldas on the Pacific coast. The key market will be the US, particularly California.

## NEW ROUTE

Rather than running alongside the existing Sote pipeline, a northern route was chosen for the OCP. Given a critical report about the new route from Washington research body the Smithsonian Institution, and the extra cost of building new access roads, this was a little strange. The north route crosses steep mountainous terrain with sharp ridges, including regions of high biodiversity and ecotourism activity.



## INCREASED EXPLORATION

A projected pipeline capacity of up to 450,000 barrels per day will require hundreds of new oil wells – each with its own service roads and flow lines.

It is thought that most of the region's heavy crude deposits lie beneath national parks, wildlife reserves and indigenous territories. Parts of Ecuador's Amazon region have already been designated as oil 'blocks'. Estimated to contain Ecuador's largest reserves of heavy crude, Block 20 falls within the boundaries of the Yasuni National Park – a Unesco World Biosphere Reserve that already has a number of active oil wells. In May 2000 the Argentinean company Perez Companc discovered about 300 million barrels' worth of oil reserves in a 500,000-acre area called Block 31, most of which also lies in the Yasuni National Park.

## CANCER INCREASES

The Afro-Ecuadorians of the coastal Esmeraldas region are experiencing high rates of cancer, plus respiratory, skin and stomach illness due to ongoing air, water and land contamination. However, the highest cancer rates are found in Ecuador's Amazon region.

## BLACKMAIL

In rural areas many small farms have been affected by pipeline construction, with damage to crops, grazing lands and water supplies. Many landholders (particularly in the Lago Agrio area) were reportedly pressured, blackmailed or threatened into signing agreements with the consortium. Some of those who refused claim to have been forced off their land, at OCP's request, by the Ecuadorian military and given nothing by way of compensation.



## MILITARY REPRESSION

In February and March 2002 thousands of striking OCP workers and inhabitants of the northern Ecuadorian Amazon were attacked by the country's armed forces. Unofficial reports say that four people died and hundreds more were wounded. Numerous other grassroots protests and blockades have taken place around the country.

## VIOLENT ASSAULTS

In August 2001 nine female environmentalists were violently assaulted after attempting a peaceful sit-in at the OCP offices in the Ecuadorian capital Quito. Company security guards destroyed TV cameras and seized journalists' photographic equipment. One journalist from Quito's *El Universo* paper was reportedly locked in a room and beaten by OCP employees.

## Esmeraldas

## Rio Esmeraldas

## Rio Gu

## Mindo

## QUITO

## DESTROYING NATIONAL PARKS

The new pipeline cuts through seven legally protected national parks and reserves, including the cloud forest of the Choco-Andean Rainforest Corridor project – a World Bank Global Environment Facility Biosphere Reserve. In a December 2001 letter to then OCP president Hernan Lara, the World Bank expressed its 'deep concern' over the impacts of the pipeline on the reserve. The bank has now expressed its concern to OCP about the Choco-Andean Rainforest Corridor on at least three occasions.

## POLICE BRUTALITY

Some Mindo residents and overseas environmentalists began a tree-sit on the land in Jan 2002, to be violently evicted by police two months later. International blockaders, including Julia Butterfly Hill, famous for occupying a Californian redwood tree for two years, were deported, while five of the community members faced charges of sabotage and terrorism against the state.

## BIRD RESERVES

Of all the areas that lie on the pipeline's route, the Mindo Nambillo Cloud Forest reserve is probably the most ecologically significant. A mecca for birdwatchers, it contains several threatened and endangered Andean habitats – including the sub-tropical Choco cloud forest.



The Choco forest has some of the world's richest biodiversity. Of the 450 bird species found there about 46 are endangered. Birdlife International considers it to be the most important bird sanctuary in Latin America.

## POLLUTING DRINKING WATER

The pipeline route runs for miles along the fragile Guarumos ridge, where use of heavy machinery on the steep and narrow slope caused a number of landslides. In this region, an oil spill could affect either of two river systems: the Mindo river to the north, a major source of drinking water for surrounding communities, and the Alambi basin to the south.

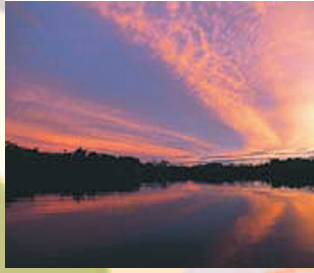
## OIL SPILLS

World Bank environmental adviser Robert Goodland stated in March this year that oil spills from the new pipeline had already begun. He called on OCP funder Westdeutsche Landesbank to end illegal arrests and police assaults on local communities.

# COLOMBIA

## ECOTOURISM ENDANGERED

The Mindo Nambillo cloud forest is home to a burgeoning ecotourism industry. A property on the Guarumos ridge that lay in the pipeline's proposed path was bought by wilderness guides and ecotourist businesses so as to protect it. The pipeline was, nevertheless, built illegally through this property.



## INDIGENOUS PEOPLE THREATENED

The auctioning off of several more oil blocks is expected in 2003. To some people these areas are squares on a map, but to others they represent virgin forest and are often home to indigenous tribes. The Indians affected are the Achuar, Shuar, Huaorani, Quichua, Shiwiar and Zapara – most of whom are opposed to oil development on their land.



## COMMUNITIES DISRUPTED

The arrival of some of the project's 5,000 construction workers has had a heavy impact on some small rural communities, with problems such as violence, alcohol abuse and prostitution. There has been a total lack of consultation with affected communities, in violation of Ecuador's constitution. In contrast, the environment group Acción Ecológica has been holding ongoing workshops for communities to be affected in the future, highlighting the likely impacts of increased oil drilling.



## VOLCANOES

In November 2002 the Reventador volcano (located 93 kilometres east of Quito) erupted, damaging equipment and nearly a kilometre of pipeline that was yet to be buried.



## LANDSLIDES

The steep slopes on the sides of the Andes experience heavy rainfall. This can cause landslides that could result in the OCP pipeline rupturing with disastrous consequences.



## SPECIES AT RISK

The roughly rectangular Block 15 includes a 140,000-acre primary rainforest reserve called Pañacocha, where Occidental Petroleum has already carried out seismic testing and exploratory drilling.

Pañacocha contains flooded forest and black lagoon systems. It lies between two huge protected areas, the Yasuni National Park and Cuyabeno Wildlife Reserve, and is home to jaguars, ocelots, and nine monkey species. There are more than 500 bird species and a large number of endangered pink Amazon River Dolphin in the region.

In 1998 and 1999 a coalition of environment groups led by Australia's Rainforest Information Centre raised the money to buy 120 acres and an ecotourist backpacker lodge that was for sale as a foothold towards protecting the entire area.

### 1 Please write to the US office of Westdeutsche Landesbank

Ask it to pull out of the OCP project due to its non-compliance with World Bank standards. Contact: Manfred Knoll, regional head of structured finance Americas, Westdeutsche Landesbank, 1211 Avenue of the Americas, New York, NY 10036, US (fax: (00) 1 212 852 6232; email: manfred\_knoll@westlb.com)

### 2 Write to EnCana, the Canadian firm with the biggest stake in OCP

Contact: Gwyn Morgan, chief executive officer, EnCana Corporation, PO box 2850, Calgary, Alberta T2P 2S5, Canada (fax: (00) 1 403 645 3400; email: gwyn.morgan@encana.com)

### 3 Write to the president of Ecuador, sending copies of your letter to the minister of energy and Acción Ecológica

Call for the cancellation of the contract between Ecuador and the OCP consortium because of human rights and environmental abuses, and demand that Ecuador declares a moratorium on the expansion of its oil frontier. Contact: President Lucio Gutiérrez, Despacho Presidencial, Calle García Moreno y Chile, Quito, Ecuador (fax: (00) 593 22 580748; email: karina.giler@presidencia.gov.ec); Carlos Arboleda Heredia, Ministerio de Energía y Minas, Juan León Mera N26-220, Quito, Ecuador (fax: (00) 593 22 906 350); Acción Ecológica, email: natwe@uiio.satnet.net

### 4 Please contact the IMF

Request the cancellation of Ecuador's debt in exchange for Ecuador protecting its Amazon forests and indigenous people. Contact: Horst Koehler, managing director, the IMF, 700 19th Street, NW, Washington, DC 20431, US (fax: (00) 1 202 623 6278; email: hkoehler@imf.org)

### For more information

Amazon Watch: [www.amazonwatch.org/megaprojects/ocp\\_ecuad.html](http://www.amazonwatch.org/megaprojects/ocp_ecuad.html)

Rainforest Information Centre: [www.rainforestinfo.org.au/ocp/welcome.htm](http://www.rainforestinfo.org.au/ocp/welcome.htm)

## TIDAL ENERGY • Could the latest type of tidal-power generator be environmentally benign and deliver cheap, dependable and sustainable energy?

The construction of a revolutionary new tidal power station, which promises to supply half the power needs for a city the size of Swansea, is due to begin early next year. Tidal Electric's £35m project, the first of its kind in the world, is to be built in Swansea Bay, South Wales, and is scheduled to start production in late 2005.

There are currently two commercial-scale tidal power stations in operation around the world: a 240-megawatt plant at La Rance near St Malo in Brittany, and a 16-megawatt facility at Annapolis Royal, Nova Scotia, Canada. The development of further projects has been held back by a range of significant environmental and logistical problems, including:

- tidal-power barrages confuse and kill migratory fish, which must pass through the turbines to access estuaries or seas – the mortality rate is around 6 per cent;
- navigation channels become blocked – locks can be installed, as at St Malo in France, but access is slow and expensive;
- barrages change the size and location of the inter-tidal zone;
- barrages can alter the tidal cycle and change water levels – local wildlife is forced to adapt, move, or die;
- barrages obstruct the natural 'flushing' of tidal basins; and
- the St Malo barrage has been plagued by the silting up of the enclosure.

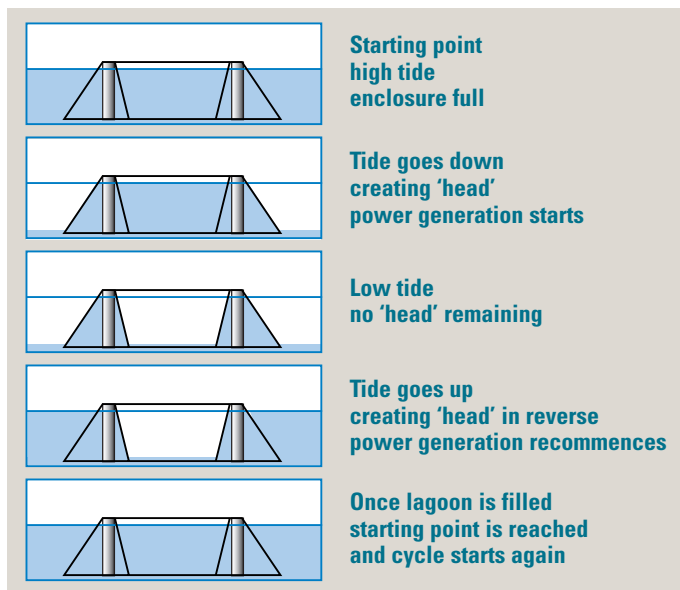
So what's different about Swansea's Offshore Tidal Project?

### REVOLUTIONARY DESIGN

The Swansea Bay offshore tidal project consists of a large, circular, rock-walled lagoon built on tidal flats between the high and low water marks.

As the tide comes in, water surrounds the large lagoon. At the point of high tide, the tunnels inside the walls of the lagoon are opened. Turbines within the tunnels are then turned by the force of the incoming water and as a result electricity is generated.

When the water in the lagoon reaches the height of the surrounding high tide, the lagoon tunnels are closed. When the tide runs out, the water trapped inside the lagoon is released to run back out through the turbines and electricity generation recommences.



### TIDAL ENERGY IN NUMBERS

- 200** miles – the longest tidal bore in the world runs up the Chientang River from the China Sea; it reaches a height of 30 feet
- 60** feet in the height of the largest tidal range in the world, in the Bay of Fundy, Nova Scotia, Canada
- 10** feet an hour – the rate at which the water level in the Bay of Fundy rises; as fast as the water in a bath tub with both taps opened full
- 0.25** pence per kilowatt-hour – the estimated cost of electricity from the Swansea Bay project once the development and construction costs have been repaid
- 12** knots (15 mph) – the speed of the fastest flowing tidal stream in the UK, in the Pentland Firth between Orkney and mainland Scotland
- 25** factor by which the volume of the Gulf Stream, the world's best-known tidal current, exceeds the combined flow of all the world's rivers

France built the first and, with a 240-megawatt capacity, still the biggest tidal power station in 1966 at La Rance near St Malo in Brittany.

Tidal energy is actually one of the oldest forms of energy used by humans. Tidal mills were common in Europe as far back as the Middle Ages, when water captured in millponds at high tide was used to drive water wheels as tides fell. Power was typically used for grinding grains into flour.

The daily tidal cycle lasts for 24 hours and 50 minutes. During a 24-hour period, the moon travels about 12 degrees off its 360-degree orbit. The tidal cycle's extra 50 minutes accounts for the time it takes the earth to 'catch up' with the moon's new position.

Tidal currents are vital to many forms of marine life. For example, sessile filter-feeders such as clams, sponges and seasquirts rely on plankton carried to them by tides.

Offshore tidal power (OTP) involves minimal environmental impact; there are zero emissions, a limited affect on shoreline geomorphology, and migratory fish can simply swim around the structure. It could provide habitats for many species – from micro-organisms to birds.

A small number of large OTP plants in the Severn Estuary could be a direct replacement for Somerset's ageing Hinckley Point nuclear power station, which is due for closure in 2011.

OTP plants produce cheap electricity: the projected initial cost of electricity from the Swansea Bay project is two pence per kilowatt-hour – that's similar to the cost of conventional gas-fired power. None of the technology needed is new. An OTP generator uses conventional hydroelectric generation equipment, which has been in existence for more than 120 years. The structure that holds the water itself can be made from local waste materials.

Tidal power is inherently predictable.

# DOES SIZEWELL MATTER?



TOMORROW'S  
PROBLEMS  
TODAY

'Plutonium... is so exceedingly toxic that one thousand millionth of a gram has been known to cause cancer in dogs... has a predilection for testicles where it mutates genes which determine the characteristics of future generations.... has a half life of 24,400 years, meaning that it is radioactive for half a million years... lives on to enter testicle after testicle for the rest of time, while the damaged genes are propagated generation after generation also for the rest of time... is a byproduct of nuclear fission, and approximately 250 kilograms are manufactured each year in a 1000 megawatt nuclear power plant.'

HELEN CALDICOTT, FOUNDING PRESIDENT OF PHYSICIANS FOR SOCIAL RESPONSIBILITY, CO-WINNER OF 1985 NOBEL PEACE PRIZE; AUTHOR OF *NUCLEAR MADNESS*.

**Bearing pickaxes and pliers, the poor of South Africa are learning that if they want to rebuild their nation they will have to do it for themselves. Paul Kingsnorth reports from a country where liberalisation has taken over from liberation**



# a shattered dr

**A** young man in a red T-shirt bearing the legend 'Soweto Electricity Crisis Committee' is hauling himself up a telegraph pole in a Soweto suburb. When he gets to the top, he reaches into a leather bag slung around his shoulder and pulls out a pair of pliers and a knife. He spends a couple of minutes doing something technical to the wires, then lowers himself down.

He makes his way over to an electricity meter on the side of a nearby house, and swings a pickaxe at it. It splinters and tears away from the wall. Using a knife, and a bin bag for insulation, he makes

some adjustments to a jumble of wires sticking out of the wall. Then he stands up, dusts himself down and approaches the house owner – an old woman who has been watching anxiously from her doorway.

'You now have electricity,' he says, grandly. He flicks the woman's light switch, and her tiny front room floods with light for the first time in weeks. She begins to sniff, gratefully. 'Now I'll be able to drink tea in the morning, instead of water,' she says. 'Oh thank you!'

The man is one of dozens of illegal 'reconnectors' who roam

Soweto restoring the electricity of people who have been cut off for non-payment of their bills. He is part of 'Operation *Khanyisa*' ('operation light-up') – a campaign of resistance to the steadily rising cost of basic utilities that is hitting the poor in South Africa's townships. Collectively, Soweto owes state electricity company Eskom almost a billion rand (about \$80m) in unpaid bills. But Soweto has 70 per cent unemployment, and most people simply cannot afford to pay. Eskom's response is to cut them off by the thousand. The Sowetans' response is to reconnect themselves.



# ream

The man in the red T-shirt says the government promised the poor free electricity before the last election, but hasn't delivered. He is not alone in feeling angry; across Soweto, people say their bills are rising and rising; they blame the government. Reconnection is dangerous, difficult and illegal, but the people say they have no choice; they are desperate.

The Sowetans are right: their electricity bills *are* rising. They are rising because Eskom is being prepared for privatisation, and the South African government (on the World Bank's advice) will not

subsidise prices for the poor blacks in places like this. These are the poor blacks whom the ANC was supposed to liberate; the poor blacks who thought when Nelson Mandela came to power in 1994, and apartheid finally dissolved, that their country was finally in their hands.

Something is happening in South Africa; something that was never meant to be part of the post-apartheid landscape. Electricity and water cut-offs, evictions, rent hikes – all have been rising since the ANC came to power. The gap between the rich and the poor has been growing, and the poor have been getting poorer. And in South Africa, 95 per cent of the poor are black.

Across the country, discontent is spreading. People are beginning to talk of a 'war on the poor' – a war led by the ANC government. Some are saying that they are actually worse off now than they were under apartheid. It seems almost impossible to believe. Yet the claims continue to be made, and are growing louder. What on earth is happening to the Rainbow Nation, and why?

### The name's Bond

If there is one man who can begin to explain, it is Patrick Bond. A Johannesburg academic and veteran anti-apartheid campaigner, Bond helped Mandela's ANC government draft its economic policies before it came to power in 1994. He used to be an insider; now he is a bitter critic of what he claims the government has become. He has kindly agreed to show me around and put me up for the duration of my stay in South Africa, despite having never met me before. 'Phone me when you get into Jo'burg,' he told me. So I do.

Patrick lives in a Johannesburg suburb called Kensington, which – like most overwhelmingly white suburbs in South Africa – is defined by big gates, loud dogs and armed-response signs. On the evening of my first full day in the country I find myself sitting in Patrick's kitchen, which looks out over the city. Patrick has poured us both large gin and tonics, and is telling me his

version of South Africa's story since apartheid ended.

In 1994 the first democratic election in South Africa's history swept the ANC to power. It inherited a shattered country: economic growth stalled at just over 1 per cent, unemployment between 20 and 30 per cent, inflation at 10 per cent. More significantly, society was polarised in an almost unique way.

'Ninety-five per cent of the poor were black,' says Patrick, sipping his drink, 'and another four per cent were "coloured" – mixed race. Only 1 per cent of the poor were white or Indian. The wealthiest 5 per cent of the population – all white, of course – were consuming more than the bottom 85 per cent put together.'

Before the election, the ANC had rolled out, to great fanfare, its proposed solution: the 'Reconstruction and Development Programme' (RDP). The RDP, which Patrick helped write, was to be an ambitious programme of economic reconstruction and social improvement. 'The first priority,' it stated, 'is to begin to meet the basic needs of people – jobs, land, housing, water, electricity, telecommunications, transport, a clean and healthy environment, nutrition, healthcare and social welfare.' This was to be achieved through programmes to 'redistribute a substantial amount of land to landless people, build over one million houses, provide clean water and sanitation to all, electrify 2.5 million new homes and provide access for all to affordable healthcare and telecommunications'. 'The success of these programmes,' the ANC ►



said, 'is essential if we are to achieve peace and security for all.'

This was unequivocal stuff. It was also short-lived. By 1996, the RDP was dead, its most ambitious plans shelved, many of its targets (though not all) unmet, the ministry created to oversee its progress quietly closed. The ANC's experiment in nation-building had lasted just two years. In its place came something altogether more unexpected – and very much more painful.

### Emperor's new Gear

In 1996 the government unveiled a new economic programme – the 'Growth Employment and Redistribution' programme, or Gear. For many of the party's erstwhile supporters, Gear was a nasty shock.

Unlike the RDP, which had been drawn up after long consultations with communities, NGOs, unions and others, Gear was designed by a cabal of 15 economists and launched on to the party, and the country, with no consultation. 'Two of the economists were from the World Bank,' explains Patrick, 'and a lot of the rest were from big South African banks and conservative economic think-tanks.' It showed.

In one fell swoop Gear publicly realigned the ANC's entire economic approach. It moved the party from being a government of social democrats to being a government offering up the most unashamedly neo-liberal policy platform in Africa. Gear accepted that growth was more important than redistribution, and that widespread privatisation and foreign investment were necessary for that growth. It tacitly accepted the impossibility, in a market-led world, of carrying out many of the government's proposed social programmes – including widespread land reform, public works schemes, state housebuilding projects and free utilities for the poor.

Rather than the language of national reconstruction, Gear talked the language of the markets – the language of 'greater labour market flexibility', 'economic stability', 'sound fiscal policy', 'foreign direct



REUTERS

investment' and 'strong export performance'. Behind it all lay a familiar mantra: private capital would create the wealth, and a free market would distribute it.

'Gear is a capitulation to the markets,' says Patrick now – draining the last of his gin and tonic, 'but also to established power within the country. Essentially, democracy arrived, and the ANC got into power and there was kind of a deal; the white businessmen said: "OK, you chaps can have the state, but you let us get our money out of here." In the meantime, you've got the World Bank sniffing around even before the ANC got into power; housing and infrastructure and land reform policies were influenced by the World Bank in the mid-1990s, which is why they failed. The ANC bought into a very one-sided Faustian pact.'

Whatever the ANC's precise motivation, the results of this national realignment are now becoming clear. According to its opponents, almost a million jobs have been lost to Gear. South Africa's unemployment rate is now estimated, conservatively, at 25 per cent; it may be as high as 40 per cent. Twenty-two million South Africans, in a population of 42 million, still live in absolute poverty, and the proportion of black South

Africans living below the poverty line has increased dramatically since the ANC came to power – from 50 per cent to 62 per cent.

Gear's World Bank-approved policy of 'cost recovery' has only exacerbated these problems. It has been estimated that close to 10 million South Africans have had their water cut off, 10 million have had their electricity cut off, and 2 million have been evicted from their homes as a direct result of this policy; all for non-payment of bills that most have no ability to pay – half the South African population gets by on around \$2 a day.

In the townships and homelands today a feeling is beginning to grow that few, if any, had ever expected; a feeling that the ANC, the great liberator, is selling out its own people. If this is true the question is: 'What are the people going to do about it?'

### Growing resistance

All over South Africa, there is growing grassroots resistance – the kind of community defiance exemplified by the Soweto Electricity Crisis Committee and its roving gangs of red-shirted reconectors. In townships all over the country anger is turning into action: electricity and water reconectors, anti-privatisation

forums, anti-eviction groups, 'concerned residents' committees and more nebulous, unofficial stirrings of opposition to the on-the-ground results of the ANC's market-led policies.

George Dor, head of the Johannesburg branch of the Alternative Information and Development Centre, is one of only a handful of people on the Johannesburg NGO scene trying to deal with a rapid growth of interest in this kind of opposition. The ANC itself, of course, is not happy about the work that people like Dor are doing. Not happy at all.

'The ANC's attitude to what we do is interesting,' says Dor. 'It's basically: "Who are you? Civil society? What are you for? Why don't you just close down? We led the struggle. We are the mass movement, and now we're in government." Government has bred arrogance in them very quickly. They will always accuse everyone who even questions them of being "counter-revolutionary". Resentment is starting to build against that. It is slow and still small, but at the same time much bigger than even a few years ago. Things are starting to develop. People are starting to understand and feel strongly about the issues – and the global issues – as they relate to what is happening on the ground here in South Africa.'

### Old left, new left

To understand this resentment, and to see what the struggles that Patrick and Dor talk about actually mean to people's lives, I travel to Durban. I am sitting in the back seat of a car, belting down a motorway. In the front seats are a pair of frighteningly effective and uncompromising activists with fire in their bellies and frustration in their hearts.

Ashwin Desai, a South African Indian, is a doctor, a writer, an activist, a community hero and an ANC hate-figure. Heinrich Bohmke is a lawyer, an activist, and an ex-ANC member, who is now as disillusioned with the party as

anyone gets. Both were imprisoned by the apartheid regime, and both are seeking a new approach to political change in the country. They have been working for the past few years to help the people of the Durban townships resist eviction, cut-offs and destitution. Desai and Bohmke are street-fighters – literally and metaphorically. Both have strong opinions on... well, everything, which they are currently laying out for me at 70 miles an hour.

'I'm sick of the fucking left,' Bohmke says as he drives. He wears a sensible, tucked-in shirt and trousers and little rectangular glasses. He looks like a lawyer, and talks like a revolutionary.

'There are two lefts in South Africa,' he goes on. 'One is old and bureaucratic and ossified, and the other is new and creative and still unformed. There's all this intellectual Marxist shit, and then there's people in communities doing things they need to do. But they don't connect it to some great neo-liberal project, they just do it. I've stopped even referring to myself as "left". It's so patronising and disempowering, calling yourself "left" or "progressive". We need a new vocabulary.'

'Right!' says Desai. 'And we need to connect up these struggles, connect them up nationally, and internationally, with all those other movements that are out there. It's starting to happen, but it's slow. Instead of always asking the state to give us what we deserve, we need some way of taking it. These people are angry, man. Guys are turning up with guns and throwing them out of homes they can't afford to pay for.'

'But it's so hard in this country,' cuts in Bohmke. 'People are so sick of struggling. And there's still this great legacy of liberation to deal with.'

'There's a lot of energy, you know,' says Desai, 'but how do we harness it? How do we make sure that Cosatu (the trade union congress) or the ANC don't harness it? Or some little bunch of fascists?

You know organised labour won't work with us – they just won't. They've got their little power base, and they're going to defend it, whatever the consequences. They're so fucking shortsighted. You know, during the racism conference we held a community march of the poor. We had 20,000 people on the streets. Next day, Cosatu holds its own march and gets about 9,000 people out. Next day, the ANC holds another one, and they get about 2,000 people.'

Bohmke changes gear determinedly. 'But at least people are starting to break through the barrier of illegality,' he says. 'They've given up expecting the government to do right by them. But then, you know, we have these leftie intellectuals in Jo'burg who are just waiting for Pretoria to have a change of heart and invite them in to sort out the economic programme. Whenever we mobilise for any sort of confrontation here it's always: "Well, comrade, we support your struggle, but we're worried about your analytical fucking framework and your tactics." Your tactics, man! People are dying, literally, and they're worried about tactics.' I'm suddenly glad that Patrick isn't here.

'You've come at an interesting time,' says Ashwin. 'We're entering a new phase of political activism in this country. Hein and I, we both feel it's time for new approaches. As a movement we need to start proposing things, getting out there, doing things ourselves. You know, Zapatista-style. Taking it back; communities doing it themselves, instead of always reacting to whatever shit the government gives them. A lot of activists here are stuck in old ways of reacting to injustice. We need some new ones, man, and fast.' ■

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 Extracted from *One No, Many Yeses* (Simon and Schuster), Paul Kingsnorth's book on the global resistance movement. To order a copy at the special price of £9 (including p&p), call 0870 787 1091 and quote reference SS015

## **WATER FLUORIDATION** The government is planning to fluoridate the UK water supply in the belief that it will reduce tooth decay. Such a move would represent the compulsory medication of a toxin. By Layla Dayani

Cabinet papers leaked to *The Sunday Times* early in May revealed government plans to fluoridate drinking water in England and Wales. The reason given for this move is that it would reduce tooth decay among children in 'deprived' areas.

Until now it has been up to the water companies to decide whether to add fluoride to the water supply. Not wanting to face possible litigation, the industry has been reluctant to do so. Now, a proposed amendment to the Water Bill would shift that responsibility to health authorities.

Anticipating opposition to what amounts to compulsory medication, water minister Eliot Morley and public health minister Hazel Blears said: 'Those adamantly opposed [to water fluoridation] would be able to use water filters that remove fluoride or buy bottled drinking water.'

### WHAT IS FLUORIDATION?

Fluoridation is the addition to drinking water of chemicals based on the element fluoride, purportedly to protect growing teeth in children. The chemicals used to fluoridate drinking water, silicofluorides, are a toxic waste product from the phosphate fertiliser industry. They are unprocessed hazardous waste containing a whole host of toxic substances – including arsenic, mercury and lead – not found in pharmaceutical grade fluoride.



### FLUORIDE IN NUMBERS

**1** teaspoon of fluoride is enough to kill a human being

**11** per cent of the UK's population currently receive fluoridated water

**30** to 50 per cent of children suffer from dental fluorosis (excessive fluoridation) in optimally fluoridated communities

**85** per cent of the tooth decay suffered by children would be unaffected by fluoridation

**98** per cent of countries in western Europe have rejected fluoridation

**100** times more fluoride in fluoridated tap water than breast milk

**7:1** the ratio of the incidence of bone cancer in fluoridated to non-fluoridated areas

### REASONS NOT TO FLUORIDATE WATER:

#### 1 Fluoride is a toxic substance

- It is the active ingredient in most pesticides. Just over two grams (roughly a teaspoon) is enough to kill an adult; 300 milligrams is enough to kill a child.
- In the US people have died and many have been hospitalised suffering from fluoride poisoning, when faulty fluoridation equipment has pumped excess fluoride into the water.

#### 2 Fluoridation is unnecessary

- Western Europe, which is 98 per cent unfluoridated, has experienced a similar decline in cavities as the heavily fluoridated US and today enjoys the same low level of tooth decay.
- Fluoridation is largely ineffective at preventing 'pit and fissure' decay, which accounts for more than 85 per cent of all dental decay.
- Most people receive the 'optimal' one milligram per day of fluoride without ever drinking a glass of fluoridated water.

#### 3 Fluoride causes infertility

- Fluoride wreaks havoc on the reproductive system. It renders sperm non-functional and increases rates of infertility. A recent study conducted in the US found increased rates of infertility among women living in areas with three or more parts per million fluoride in the water.

#### 4 Fluoride is a cumulative poison

- Nearly half the fluoride we ingest each day accumulates in our bodies – primarily in the bones, but also in soft tissues. High levels cause a crippling bone disease known as skeletal fluorosis.
- Fluoride stimulates abnormal bone development. Clinical trials report that high-dose fluoride treatment increases bone mass, but that the newly formed bone is 'structurally unsound'.

#### 5 Fluoride depresses thyroid function

- Up until the 1950s, European doctors prescribed fluoride to reduce the activity of the thyroid gland for people suffering from overactive thyroid. Hypothyroidism (under-active thyroid) is currently one of the most common medical problems in the US.

#### 6 Fluoride is a neurotoxin

- A December 2000 study found fluoridated water was associated with elevated levels of lead in children's blood, which is in turn linked to a variety of neurological problems – including aggression, hyperactivity and reduced intelligence.
- Studies from China have found an association between elevated fluoride exposure and decreased IQs in children.

#### 7 Fluoridation is unethical

- It contravenes the European Convention on Human Rights and Biomedicine, which sets out the criteria for medical intervention. Water fluoridation denies the right of the individual to refuse or give consent to any medication involving their person.

#### 8 Fluoridation is illegal

- The compulsory provision of medical treatment contravenes the 1998 Human Rights Act. It violates the individual's right to informed consent to medication.

**France:** 'Fluoride chemicals are not included in the list [of chemicals for drinking water treatment]. This is due to ethical as well as medical considerations.' *Louis Sanchez, head of environmental standards for the city of Paris, August 2000*

**Belgium:** 'This water treatment has never been of use in Belgium and will never be (we hope) in the future.'

*Christian Legros, director, Belgaqua, Brussels, February 2000*

**Norway:** 'In Norway we had a rather intense discussion on this subject some 20 years ago, and the conclusion was that drinking water should not be fluoridated.'

*The National Institute of Public Health, Oslo, March 2000*

**Austria:** 'Toxic fluorides have never been added to public water supplies in Austria.'

*Manfred Eisenhut, head of water at Gass Wasser, Vienna, February 2000*

**Czech Republic:** 'Since 1993 drinking water has not been treated with fluoride in public water supplies throughout the Czech Republic. Although fluoridation of drinking water has not actually been proscribed it is not under consideration because this form of supplementation is considered:

- uneconomical – only 0.54 per cent of water suitable for drinking is used as such; furthermore, an increasing amount of consumers (particularly children) are using bottled water for drinking;

- unecological;

- unethical [because of lack of consumer choice]; and

- toxicologically and physiologically debatable; fluoridation represents an untargeted form of supplementation that disregards actual individual intake and requirements and may lead to excessive health-threatening intake in certain population groups.'

*Dr B Havlik, minister of health, the Czech Republic October 1999*

Just when you thought it was safe...

# JAWS

AVOID ENFORCED FLUORIDATION

KEEP  
EM  
SHUT

STARRING

**HAZEL  
BLEARS**

**TONY  
BLAIR**

**ELIOT  
MORLEY**

Co-starring Arsenic, Beryllium, Mercury and Lead • Based on the novel idea by the Manhattan Project

Directed by the UK Government • Produced by the phosphate fertiliser industry • Filmed in Discolouration • Twentieth Century Fix

ESPECIALLY UNSUITABLE FOR CHILDREN

In the 1930s US dentist Weston Price travelled the world to study the diets of 'primitive' peoples. He found a startling lack of disease and proof that a system of environmentally-friendly local food production is the best way to ensure human health. By Sally Fallon

# nasty, brutish & short

In the US, one person in three suffers from allergies, one in 10 will have ulcers and one in five is mentally ill. Every year a quarter of a million infants are born with a birth defect who then undergo expensive surgery or are hidden away in institutions. Other degenerative diseases – arthritis, multiple sclerosis, digestive disorders, diabetes, osteoporosis, Alzheimer's, epilepsy and chronic fatigue – afflict a significant majority of US citizens. And learning disabilities such as dyslexia and hyperactivity make life miserable for 7 million young people and their parents.

These diseases were extremely rare only a generation or two ago. Today, chronic illness afflicts nearly half of all Americans and causes three out of four deaths in the US. Most tragically, these diseases, formerly experienced only by the

very old, now strike children and those in the prime of life. We have almost forgotten that our natural state is one of balance, wholeness and vitality.

Things were not so bad in the 1930s, but the situation was already then serious enough to alarm one dentist in Cleveland, Ohio. Dr Weston Price was reluctant to accept the conditions exhibited by his patients as normal. Rarely did an examination of an adult patient reveal anything but rampant decay, which was often accompanied by serious problems elsewhere in the body such as arthritis, osteoporosis, diabetes, intestinal complaints and chronic fatigue. But it was the dentition of younger patients that alarmed Price most. He observed that crowded, crooked teeth were becoming more and more common, along with what he called 'facial deformities' – overbites, narrowed

faces, underdevelopment of the nose, pinched nostrils and lack of well-defined cheekbones. Such children invariably suffered from complaints that would sound all too familiar to mothers today: frequent infections, allergies, anaemia, asthma, poor vision, lack of co-ordination, fatigue and behavioural problems.

Price had also heard utopian stories about the good health of primitive cultures. He resolved to find out if the 'backward' societies that the US was intent on evangelising and colonising were indeed healthier than his own. For the next 10 years, he travelled to various isolated parts of the earth, where the inhabitants had no contact with 'civilisation', in order to study their health and physical development.

Once he had gained the confidence of the tribal or village



elders, Price did what came naturally to him – he counted cavities. The results were startling. He found groups of people in whom less than 1 per cent of their permanent teeth were decayed. He found 14 isolated groups in all where tooth decay was rare to non-existent; these were people who had never seen a dentist and never brushed their teeth. Freedom from caries always went hand in hand with freedom from disease – both chronic disease like cancer and heart disease, and infectious disease like tuberculosis. In Price's day TB afflicted much of the world in epidemic proportions.

These investigations occurred at a time when there still existed remote pockets of humanity untouched by modern inventions, but when one modern invention – the camera – allowed Price to make a permanent record of the people he

studied. He took photograph after photograph of beautiful smiles, and noted that 'healthy primitives' were invariably cheerful and optimistic. Such people generally showed 'splendid physical development'. The women gave birth with ease. Their babies rarely cried and their children were energetic and hearty. Many other observers have reported a virtual absence of degenerative disease, particularly cancer, in isolated, so-called 'primitive' groups.

Price studied a number of societies that were in transition, where stores or outposts had been established and native foods replaced by the products of western civilisation – sugar, white flour, condensed milk, canned foods, chocolate, jams and pastries – what Price called the 'displacing foods of modern commerce'. His photographs capture the suffering caused by these foodstuffs – chiefly

rampant tooth decay. Even more disturbing, they show the change in facial development that occurred with modernisation. Parents who had changed their diets gave birth to children who no longer exhibited the tribal patterns. Their faces were more narrow, their teeth crowded, their nostrils pinched; unlike those of their healthy ancestors, these faces do not beam with optimism. In other words, the displacing foods do not provide sufficient nutrients to allow the body to reach its full genetic potential.

#### **Different diets**

The diets of the healthy 'primitives' Price studied were all very different.

In the Swiss village where Price began his investigations, the inhabitants lived on rich dairy products – unpasteurised milk, butter, cream and cheese –, dense ►

rye bread, meat occasionally, bone broth soups and the few vegetables they could cultivate during the short summer months. The children's teeth were covered in green slime, but Price found only about one per cent decay. The children went barefoot in frigid streams during weather that forced Price and his wife to wear heavy wool coats; nevertheless childhood illnesses were virtually non-existent, and there had never been a single case of TB in the village.

Hearty Gallic fishermen living off the coast of Scotland consumed no dairy products. Fish formed the mainstay of their diet, along with oats made into porridge and oatcakes. Fishheads stuffed with oats and chopped fish liver were a traditional dish, and one considered very important for growing children.

The Eskimo diet, composed largely of fish, fish roe and foodstuffs from marine animals, including seal oil and blubber, allowed Eskimo mothers to produce one sturdy baby after another without suffering any health problems or tooth decay.

Well-muscled hunter-gatherers in Canada, the Everglades, the Amazon, Australia and Africa consumed game animals, particularly the parts that civilised folk tend to avoid – eg, organ meats, blood, marrow and glands (particularly the adrenal glands) – and a variety of grains, tubers, vegetables and fruits.

African cattle-keeping tribes like the Masai consumed no plant foods at all – just meat, blood and milk.

South Seas islanders and the Maori of New Zealand ate seafood of every sort – fish, shark, octopus, shellfish, sea worms –, along with pork meat and fat, and a variety of plant foods including coconut, manioc and fruit.

Whenever these isolated peoples could obtain seafood they did so – even Indian tribes high in the Andes. Insects were another common food in all regions except the Arctic.

Price's studies convinced him that the best diet was one that combined nutrient-dense whole

grains with animal products – particularly fish. The healthiest African tribe he studied was the Dinkas, a Sudanese tribe on the western bank of the Nile. They were not as tall as their near neighbours the cattle-herding Neurs, but they were physically better proportioned and had greater strength. Their diet consisted mainly of fish and cereal grains. This is one of the most important lessons of Price's research – that a mixed diet of whole foods, one that avoids the extremes of the carnivorous Masai and the largely vegetarian Bantu, ensures optimum physical development.

Purists argue that, as with grains, man should not eat dairy products because the keeping of herds dates back only a few thousand years – a drop of time in the evolutionary bucket. But there are and have been many healthy milk-drinking populations – including disease-free traditional Europeans, Americans up to WWI, Greeks and other inhabitants of the Mediterranean, Africans, Tibetans, the long-lived inhabitants of Soviet Georgia and the hearty Mongols of northern China. Even today, the use of relatively processed milk products is associated with longevity in countries like Austria and Switzerland. Modern milk, however, is denatured through pasteurisation and homogenisation, stripped of its valuable fat content, filled with antibiotics and pesticides, laced with additives and synthetic vitamins, and comes from cows that are bred to produce huge amounts of milk and which are fed everything under the sun except what cows are supposed to eat – green grass. There is evidence to link such milk with a whole gamut of modern ailments, including heart disease, cancer, diabetes, osteoporosis, autism and allergies.

Other practices common to traditional groups throughout the world include: the use of animal bones, usually made into broth that is added to soups, stews and sauces; the preservation of vegetables, fruits, grains and even meats through the practice of lacto-fermentation to

make condiments, meat products and beverages; and the use of salt. In areas where salt is not available, sodium-rich grasses and other plants are burnt and added to foods.

Familiar lacto-fermented foods include old-fashioned sauerkraut and yoghurt. But almost any food can be preserved by this method, which encourages the proliferation of beneficial bacteria. The lactic acid these bacteria produce is an excellent, natural preservative that prevents spoilage in plant foods as pickles and chutneys, meats as sausage and haggis, milk as a variety of soured products and grains as chewy breads and thick sour porridges. Lacto-fermented beverages are ubiquitous in traditional cultures – from kaffir beer in Africa to kvass and kombucha in Slavic regions. Lacto-fermented foods are artisan products (instead of mass produced items preserved with vinegar and sugar), taste delicious and confer many health benefits. They add valuable enzymes to the diet, and enhance the digestibility and assimilation of everything we eat.

Gelatin-rich broth also enhances digestion and provides the gamut of macro-minerals in easily assimilated form. Broth-based soups are snack foods in Asian countries, usually prepared in 'mom-and-pop' shops, and they form the basis of both peasant and gourmet cuisines throughout Europe. But in most Western countries the stock pot has given way to convenience foods, the meat-like taste of which derives from flavour enhancers like MSG and other neurotoxic additives.

### Eating for justice

The first happy lesson gleaned from a study of traditional diets is that healthy food can and should taste good; that we can put butter on our porridge and cook in lard; that it's OK to consume whole milk, fatty meats, liver and onions, lox and cream cheese, shrimp and lobster, even insects if you like them; that heavenly sauces made from bone broth and cream confer more



benefits than pills and powders and ersatz low-fat concoctions.

Wisely used, technology can take the drudgery out of cooking and help us bring properly grown and prepared foods to the marketplace. Wrongly used, technology produces breads that are soft and sweet rather than sour and chewy, Coca-Cola rather than cottage-industry lacto-fermented soft drinks, bouillon cubes rather than home-made broth, and sugar-embalmed ketchup with infinite shelf life rather than enzyme-rich condiments and pickles preserved to last a few months in a way that adds nutrients instead of taking them away.

The second lesson is that healthy eating is good for the ecology. The building blocks of a healthy diet are pesticide-free foods grown in mineral-rich soils and healthy animals that live free to manure the paddocks of thousands of farms instead of suffering misery and disease in confined factories. The road to health starts with a willingness to pay a decent price for such food – thus rewarding the farmer who preserves the land through wise farming practices rather than agribusiness that mines the soil for quick profits.

So, a return to traditional foods would be a way of taking power away from the multinationals and giving it back to the artisan. The kind of food processing that makes food more nutritious is the same kind of food processing that the farmer or the farming community can do in situ – eg, making sour milk and grain products, aged cheeses, pickles, sausages, broth and beverages. All the boxed, bottled and frozen products in modern supermarkets – the crisps, biscuits sweets, margarines, fizzy drinks and TV dinners – have made fortunes for a few and impoverished the rest of us. The way we eat determines not only how healthy we will be, but what kind of economy we have – the kind where a few people make millions and millions of dollars, or the kind where millions of people make a decent living. ■

**MYTH 1: Traditional diets were largely vegetarian**



Price's African trip enabled him to compare primitive meat-eating groups with those of similar racial stock that were mostly vegetarian. The Masai (pictured), Chewya, Muhima, Watusi, and Neurs were all cattle-keeping people. Their diets consisted largely of milk, blood and meat. These tribes were noted for their fine physiques and great height; in some groups the women averaged over 6 feet tall, and many men reached almost seven feet. Price found six cattle-herding tribes that were completely free of dental decay. All members

of these tribes exhibited straight, uncrowded teeth.

Bantu tribes, such as the Kikuyu and Wakamba, were agriculturists. Their diet consisted of sweet potatoes, beans, bananas, millet and kaffir corn or sorghum. It is a mistake to think these groups consumed no animal products at all, however. Some Bantu tribes kept a few cattle and goats for both milk and meat. They also ate small animals such as frogs, and put a high value on insect food. It is significant that groups that consumed mostly plant foods ate special animal foods during gestation and lactation.

**MYTH 2: Primitive diets were low in fat, particularly saturated animal fat**

Northern Canada's wild male ruminants, like elk and caribou (pictured), carry a large slab of back fat weighing as much as 40 to 50 pounds. The Indians and Eskimo hunted older male animals preferentially because they wanted this back-slab fat and the highly saturated fat found around the kidneys. Other groups used blubber from sea mammals like seal and walrus.



Dietary saturated fats actually play many important roles in human biochemistry: Saturated fatty acids constitute at least 50 per cent of cell membranes, giving them stiffness and integrity; they play a vital role in the health of our bones; they lower Lp(a), a substance in the blood that indicates proneness to heart disease; they protect the liver from alcohol ingestion; they enhance the immune system; they are needed for the proper utilisation of essential fatty acids; they are the preferred food for the heart; and they protect us against harmful micro-organisms in the digestive tract.

Even more important, animal fats are carriers for the fat-soluble vitamins A and D that are needed for a host of processes, from prevention of birth defects to healthy immune systems and proper development of the bones and teeth. Price found that traditional north American diets contained at least 400 per cent more minerals and 1,000 per cent more fat-soluble vitamins than the US diet of his day. The richest sources of vitamins A and D are the very foods modern man eschews: animal fats, organ meats, lard, fish eggs, shellfish, eggs and butter.

A surprising source of nutrients in traditional diets is shrimp, which contains 10 times more vitamin D than liver. Shrimp sauces and pastes are used throughout Africa and the Orient. This is the most likely explanation for the low rates of osteoporosis in these regions, as well as the virtual absence of diseases linked to vitamin-D deficiency such as colon cancer and multiple sclerosis.

**MYTH 3: Traditional diets led to shortened life-spans**



Arctic explorers reported great longevity among the Eskimo. And Australian Aborigine communities were noted for the large number of old people, for whom special foods were reserved that were easy to gather and hunt. The diets of traditional groups noted for longevity are rich in animal fats. The inhabitants of Vilcabamba in Ecuador and the long-lived inhabitants of Soviet Georgia, for example, consume fatty pork and whole milk products. A Soviet study found that longevity was greatest in rural communities where people ate the most fatty meat.

**MYTH 4: Grains, seeds and pulses were avoided**

Carbohydrates, in the form of whole grains and related seed foods, are not absent in healthy traditional diets – even in the diets of hunter-gatherers. What researchers often overlook is the fact that seed foods (grains, legumes and nuts) are prepared with great care in traditional societies – by sprouting, roasting, soaking, fermenting and sour leavening. These processes neutralise substances in whole grains and other seed foods that block mineral absorption, inhibit protein digestion and irritate the lining of the digestive tract. Such processes also increase nutrient content and render seed foods more digestible. For example, in India rice and lentils are fermented for at least two days before they are prepared as idli and dosas. In Africa the natives soak coarsely ground corn overnight before adding it to soups and stews, and they ferment corn or millet for several days to produce a sour porridge called ogi.

## Waging the War on Want: 50 years of campaigning against world poverty

Mark Luetchford and Peter Burns  
War on Want 2003, £8.00  
ISBN 0905990404

Reviewed by Dan Box

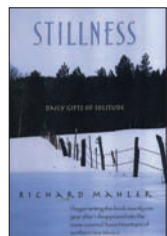


While their governments lurched from world to cold war, a few idealists in Britain realised the need for a different fight – against poverty. This book charts the first 50 years of that campaign and the organisation it founded – War on Want. The group's successes – on the frontline against pharmaceutical, tobacco and baby-food firms – are described, as is its sometimes troubled involvement with political and labour movements. The book is a testament to those volunteers who devoted their time to driving the campaign forwards. While the authors accept the war on want may never be won, they take a justified pride in the group's achievements and its continuing commitment to fighting poverty.

## Stillness: daily gifts of solitude

Richard Mahler  
Red Wheel 2003, \$21.95  
1590030427

Reviewed by Jon Napier



For the minimalists and Zen-inclined, Mahler disappears into the snowy Tusas mountains in New Mexico and shakes solitary confinement firmly by the hand. As the caretaker of a ranch with no electricity, a wood stove for heat and a short-wave radio for emergencies, he draws on his experiences to give us a book about how to de-clutter our over-rushed lifestyles.

## Global City Blues

Daniel Solomon  
Island Press 2003, \$24.00  
ISBN 1559631848

Reviewed by Jeremy Smith

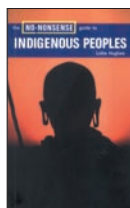


As an architect himself, Solomon is well-qualified to criticise modern architecture. What is less predictable is that he should be able to write so well while doing so. Post-war urban development, he argues, has pursued alienating and antisocial technologies. We now work in offices with windows that do not open and build new towers in ways that sever us from weather, seasons and the passage of time. In these essays Solomon makes his case in an open, human style, challenging 'a whole generation of architects... [who] came to believe that we were bringing an awaiting world the good news of the inevitable'.

## The No-Nonsense Guide to Indigenous Peoples

Lotte Hughes  
Verso 2003, £7.00  
ISBN 1859844383

Reviewed by Jon Napier



The word 'indigenous' itself sparks argument, and there is disagreement over its definition. This book's strength lies in acknowledging the difficulties of the subject and presenting the contradictions honestly. The reader is simply provided with the material to decide for themselves. Most telling is the contrast between religious and material relationships to the world. For those who are directly dependent on the land, survival relies on a sustainable relationship with it. For them, losing their land means the loss of some part of themselves.

## Bush's Brain: how Karl Rove made George W Bush president

James Moore and Wayne Slater  
John Wiley & Sons 2003  
ISBN 0471423270, £18.50

Reviewed by Tom Stafford



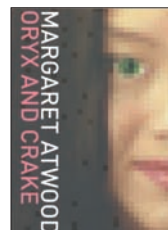
Behind every successful politician stand the few people who help him to power. For many, control of the Republican Party machine is held not by its leader but by the man who put him there. That man is Karl Rove. Written by two Texan journalists who know the men they are describing, *Bush's Brain* is both biography and political history of our time. Its authors dispel the convenient myth of Bush's sub-standard IQ and describe instead an able but reluctant politician made to fit the role created for him – a creation of Rove's ambition.

## Oryx and Crake

Margaret Atwood  
Bloomsbury 2003, £16.99  
ISBN 0747562598

Reviewed by Jeremy Smith

As in her classic *The Handmaid's Tale* Margaret Atwood's *Oryx and Crake* tells the story of a grimly dystopian future. Set in a less-than-brave new world populated by the more-than-perfect green-eyed Children of Crake, the novel shows the aftermath of man's



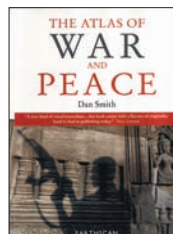
efforts to improve his own genetic material. The novel's narrator Snowman is slowly starving to death while struggling to

understand how things fell apart and whether he is himself to blame. Snowman's perspective on his apocalyptic surroundings provides a warning for humanity now standing on the brink of what Atwood imagines.

## The Atlas of War and Peace

Dan Smith  
Earthscan 2003, £11.99  
ISBN 184407000X,

Reviewed by Oscar Nowak

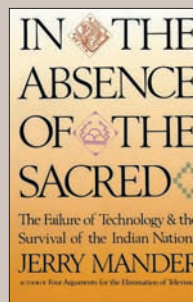


With a plethora of facts on landmines, death tolls, peace treaties, child soldiers, the arms trade and international terrorism, this book is a study of past and present world feuds. Analysing the trends and reasons for conflicts in places ranging from Northern Ireland to Sierra Leone, Smith provides a very educational book – full of statistics, and illustrated with maps, pie charts, graphs and some frightening facts. This year, for example, US military spending will be 40 per cent of the world total, and equal to the next 15 largest defence budgets.

## In the Absence of the Sacred: the failure of technology and the survival of the Indian nations

Jerry Mander,  
Sierra Club Books 1992, \$16.95  
ISBN 0871565099

Mander provides a provocative critique of the technological society, challenging its utopian promises and tracking its devastating impact on native cultures. He argues that our loss of a sense of the sacred in the natural world has led us toward global environmental disaster and social disorder. However, he offers a way out – pointing out that working models for restoring our relationship with the earth exist in the cultures of native peoples, whose values have enabled them to survive centuries of invasion and exploitation.



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## Liquid Love: on the frailty of human bonds

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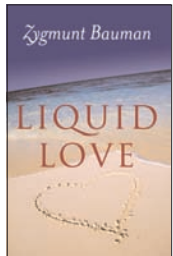
Zygmunt Bauman

Polity Press 2003, £14.99

ISBN 0745624898

Reviewed by Tom Stafford

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The radical sociologist Zygmunt Bauman looks at the effects of globalisation on love. *Liquid Love's* scattered musings are difficult but

sometimes lyrical and profound. The liquid refers to the metaphor Bauman developed in *Liquid Modernity* – the idea that the dominant ideal of this late modern age is a lack of solidity, an aversion to irreversible attachment. Commitments last merely for as long as they are convenient. Love is commercialised; it is a problem, with skills to be learnt and advice to be bought from 'relationship experts'. Variety compensates for a loss of stability; quantity compensates for diminished quality. Using sources ranging from Heidegger to *EastEnders*, Bauman dissects the human consequences of a market ideology that turns everything, including love, into a commodity.

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## Abuse your illusions: the Disinformation guide to media mirages and establishment lies

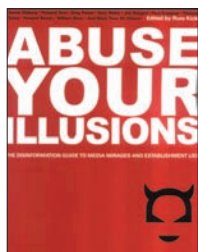
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Edited by Russ Kick

Disinformation 2003, £17.99

ISBN 0971394245

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*Abuse your Illusions* is a compilation of essays debunking several of the myths of modern society. With sections on

the truth about fluoridation, the horrors of the diamond trade and secret nuclear tests on humans, this book will shake many of your beliefs to the core. With contributors including William Blum, Greg Palast and Howard Zinn, *Abuse Your Illusions* reminds us how irrelevant most of the mainstream media really is.

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## Divorce Your Car: ending the love affair with the automobile

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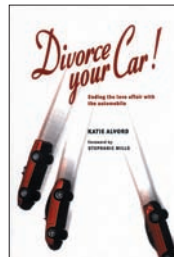
Katie Alvord

New Society Publishers 2000, \$10.00

ISBN 0865714088

Reviewed by Oscar Nowak

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From the initial heady romance with the combustion engine and early road rage experiences of shaking fists and stuck

out tongues to modern-day communities reducing auto dependence via car sharing co-ops, *Divorce Your Car* is a well-researched study of how and why to sever the link with your car keys. The financial, environmental and human costs of car culture put into perspective the real worth of the automobile. Highlighting our addiction, our marriage, the bad habits and the need to walk out on the relationship, Alvord urges us to get back on our feet or the saddle of a push-bike.

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## Anti-Imperialism: a guide for the movement

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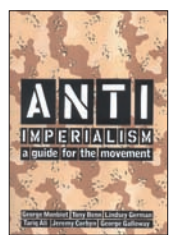
Edited by Farah Reza and John Rees

Bookmarks 2003, £10.00

ISBN 1898876967

Reviewed by Sophie Whitford

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*Anti-Imperialism* is less of a guide than a platform. In this collection of essays, leading campaigners each take one issue – from the

arms trade to the World Bank – and offer up a few pages of polemic. This is reinforced by an armoury of facts and contacts to be wielded in the fight against the imperialist enemy (identified explicitly throughout with the US). As its camouflage print cover suggests, this is a book to be picked up and used. This emphasis on activism makes *Anti-Imperialism* very much a product of its time. As the veteran journalist Phillip Knightley argues, however, the war on terror is – more than any other conflict – a war for information and its suppression. In this context, books like this are necessary.

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**With 90 per cent of the world's large fish having disappeared, it's time to find out about fish before it's too late**

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## Good Fish Guide

Bernadette Clarke

Marine Conservation Society 2003, £10.00

ISBN 0948150319

Lots of information about how to eat more sustainably, and the ins and outs of the global fishing industry. Includes recommendations for which fish to eat and which to avoid.

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## Empty Ocean

Richard Ellis

Island Press 2003, \$26.00

ISBN 1559639741

Exploring the history and characteristics of all the species that have ever swam the seas, this is a fascinating if disturbing book.

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## The Sea Around Us

Rachel Carson

Oxford University Press 1951, £6.99

ISBN 0195069978

The author of *Silent Spring's* exploration of the seas may be over 50 years old, but it is as captivating and urgent as when it was first written.

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## Song for the Blue Ocean: encounters along the world's coasts and beneath the seas

Carl Safina

Henry Holt 1999, \$17.00

ISBN 0805046712

Marine scientist Safina's exploration of hidden marine ecosystems is a passionate call for conservation of our aquatic resources.

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## Cod

Mark Kurlansky

Vintage 1999, £7.99

ISBN 0099268701

Tracing the history of one of the world's most eaten and endangered fish, Kurlansky shows how changes in fishing practices have brought the cod close to extinction.

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

The Sea Shepherd Conservation Society focuses on halting illegal fishing.

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

Earthjustice is a non-profit law firm dedicated to protecting natural resources.

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

The Marine Conservation Society is a UK charity dedicated to the protection of the marine environment and its wildlife.

[www.birdlife.net/seabirds](http://www.birdlife.net/seabirds)

Save the Albatross campaigns to stop long-line fishing – a huge threat to albatrosses.

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

The Wildlife Trusts are heading a campaign to stop dolphins dying in fishing nets.

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

The World Conservation Union publishes the 'red list' of endangered species, which includes fish such as Atlantic cod, halibut and haddock.

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[www.viridian-nutrition.com](http://www.viridian-nutrition.com)

## REACH OVER 100,000 ECOLOGIST READERS

Call Belinda Bush on 020 7351 3578, or email [belinda@theecologist.org](mailto:belinda@theecologist.org)

### ACT NOW

**Support the Stockholm Declaration** on the long-term consequences of war in Vietnam, Laos and Cambodia. Help the million Vietnamese victims of Agent Orange. Ask your MP to sign Early Day Motion 228. Sign the petition to Tony Blair. Britain-Vietnam Friendship Society. Contact: [LenAldis@compuserve.com](mailto:LenAldis@compuserve.com)

### FASLANE PEACE CAMP

22 years of opposition to nukes

Urgently needs guests

Tel: **01436 820901**

Visit: [www.faslanepeacecamp.org.uk](http://www.faslanepeacecamp.org.uk)

### SAVE ROSIA MONTANA

#### Summer resistance camp

The two beautiful Romanian valleys of Rosia Montana and Corna are set to be destroyed by what, if realised, would be Europe's largest open-cast gold-mining development. In order to make way for the project mining company Gabriel Resources has started to illegally push the people out of their houses. So, don't be afraid to make the journey, but pack your bags, take your friends and join the resistance camp.

For more information, contact: Crina Resteman; tel: **+40 721562478**; email: [crina@patrir.ro](mailto:crina@patrir.ro); visit: [www.rosiamontana.org](http://www.rosiamontana.org)

**Get more buzz from your garden** – save our native bumblebee. The National Trust and English Nature are encouraging people to manage their gardens more sensitively for wildlife. For more details, call: **01733 455100**, or visit: [www.english-nature.org.uk](http://www.english-nature.org.uk)

Make sure Esso gets the message. **Upload a photo of yourself**, drag the speech bubble of your choice onto the image and the Greenpeace Cyberactivist Community will send the result to the board of Esso/Exxon Mobil. Visit: [www.act.greenpeace.org](http://www.act.greenpeace.org)

### CAREERS

**Earthworks:** [www.earthworks-jobs.com](http://www.earthworks-jobs.com)

Worldwide careers in ecology & conservation

**COUNTRYSIDE JOBS SERVICE**  
[www.countryside-jobs.com](http://www.countryside-jobs.com)

Ethical publications to promote **countryside careers in the UK and environmental conservation worldwide**. Receive weekly listings of UK jobs, voluntary opportunities and short training courses in countryside and environmental conservation, recreation, education and interpretation. Two publications available from [www.countryside-jobs.com](http://www.countryside-jobs.com), where you will also find lots of other interesting features. **5,000+ paid UK vacancies** published during 2002.



### COURSES

**Seeing with New Eyes: an introduction to holistic science** with Brian Goodwin, Stephan Harding, Chris Clarke, Mae-Wan Ho and Craig Holdredge at Schumacher College, England, October 5-24, 2003.

An introduction to the new ideas, arising from recent developments in physics, biology, ecology and health studies, that are creating an integrated approach to understanding nature. Tel: **01803 865934**; email: [admin@schumachercollege.org.uk](mailto:admin@schumachercollege.org.uk); visit: [www.schumachercollege.org.uk](http://www.schumachercollege.org.uk)

**Nonviolence: theory and practice**, with Liz Law – director of the Scottish Centre for Nonviolence. Short course with Open University credits, Oct/Nov 2003.

#### Centre for Human Ecology,

Scotland's alternative university for ecology and community,

12 Roseneath Place, Edinburgh EH9 1JB.

Tel: **0131 624 1974**;

email: [irene.gardiner@che.ac.uk](mailto:irene.gardiner@che.ac.uk);

visit: [www.che.ac.uk](http://www.che.ac.uk)

**Building with lime and earth**, traditional repairs. One-day courses in Devon. Tel: **01884 861181**; email: [jane@blackdog.uff.net](mailto:jane@blackdog.uff.net)

**Are you looking for a degree that goes beyond environmental management** – to examine what really leads to sustainable development? The BSc SDEM offered by UHI is a blend of environmental science, socio-economics and resource management. Contact Orkney College (tel: **01856 569000**) for details, or check out the website – [www.orkney.uhi.ac.uk/sdem](http://www.orkney.uhi.ac.uk/sdem)

### HOLIDAYS

**ORGANIC FARM**, Bodmin Moor. Fully equipped Mongolian yurt. Sleeps six in comfort. Wood-burning stove. Panoramic views of Cornwall. Excellent walking. In easy reach of both coasts and the Eden Project. Camping also available. Tel: **01208 850491**; visit: [www.southpenquite.co.uk](http://www.southpenquite.co.uk)

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[gclarke@internationalbusinessschool.net](mailto:gclarke@internationalbusinessschool.net); visit: [www.internationalbusinessschool.net/ecolodge](http://www.internationalbusinessschool.net/ecolodge)

**VegiVentures Holidays** in Britain, Turkey, Peru and Africa. Great vegetarian/vegan food. Free brochure: **01760 755888**; [www.vegi ventures.com](http://www.vegi ventures.com)

**Byways Breaks**, cycling walking and cottage holidays in Shropshire, Cheshire. For a brochure, tel: **0151 7228050**, or visit: [www.byways-breaks.co.uk](http://www.byways-breaks.co.uk)

## LONG TERM HELP NEEDED AT THE ORGANIC FARM SHOP, CAFE AND GARDEN NEAR CIRENCESTER.

We are looking for people interested in organic/local food issues who can work hard to join a very positive team. Could suit a couple as we have vacancies in the organic vegetable garden and in the shop/cafe. Simple accommodation available. Non smokers.

See [www.theorganicfarmshop.co.uk](http://www.theorganicfarmshop.co.uk) for more info about us and contact email.

### ORGANIC HOLIDAYS

Accommodation on organic farms/ small-holdings (UK and abroad). Listings also include B&Bs/ small hotels

where organic produce is used according to availability. Tel: **+44 (0)1943 870791**;

email: [lindamoss@organicholidays.com](mailto:lindamoss@organicholidays.com);

visit: [www.organicholidays.com](http://www.organicholidays.com)



**Environmentally-friendly B&B** in the peaceful north Lake District. Breeding ospreys nearby. Home-cooked meals, organic and local produce used. Tel: **017687 76376**; email: [jane@parker gate.co.uk](mailto:jane@parker gate.co.uk); visit: [www.parkergate.co.uk](http://www.parkergate.co.uk)

### GALLOWAY, SOUTH-WEST SCOTLAND

C18th cottages on organically farmed estate. Walled garden, arboretum and beach. Great hill and coastal walks. Recharge your batteries. **01988 600 694**

**West Cornwall** – vegetarian B&B, organic gardens, meditation room, sea sunsets, superb walks. **01736 794183**

### THE ST IVES BAY SK2

**Beautifully converted railway carriage** offering s/c holiday accommodation at the Cornish coastal station of Hayle. Available as two lets, or one sleeping up to 14. Excellent base for public transport. Bike hire available nearby. Green Electron and recycling facilities. Day trips by train available. As featured on the Discovery Channel's *Amazing Conversions*. For more information, tel: 01503 230783; visit: [www.railholiday.co.uk](http://www.railholiday.co.uk)



**CUBA SOLIDARITY CAMPAIGN** has launched a new programme of unique and insightful study tours in Cuba. Agricultural work brigades, eco trails and sponsored bike rides through Unesco biosphere reserves. For full details, tel: 020 7263 6452; email: [tours@cuba-solidarity.org.uk](mailto:tours@cuba-solidarity.org.uk) **Experience the real Cuba**

### RESOURCES

**Properties for sale** in the picturesque area to the east of Pretoria, **South Africa's** capital. From farming and residential land to light industrial facilities. Excellent investments. Contact: Thomas Franken at [bdffarms@iafrica.com](mailto:bdffarms@iafrica.com) or phone Ludmilla King at the Cambridge Steiner School on 01223 415492. Visit: [www.ubuntucentre.co.za](http://www.ubuntucentre.co.za)

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visit: [www.claremansfield.com](http://www.claremansfield.com)



**Planning to take a dip, swim, surf or sail at beaches around the coast this summer?**

Now there is an easily accessible website where you can check how clean the water is before you decide where to go. visit: [www.goodbeachguide.co.uk](http://www.goodbeachguide.co.uk)

### VOLUNTEER

**Volunteers needed for ecological development in indigenous territory** in Costa Rica, and **conservation work** in national and marine parks in the Dutch Antilles in the Caribbean from July 2003 onwards. For details, phone: **+44 1323 871 391** or visit: [www.workingabroad.com](http://www.workingabroad.com)

**NEW ZEALAND** is a beautiful, safe, environmentally active country with a warm welcome and many interesting projects. **The New Zealand Trust for Conservation Volunteers**, supported by Edward Goldsmith, lists ways that you can help restore New Zealand's ecosystems to their natural beauty. Email: [John.jhogan@clear.net.nz](mailto:John.jhogan@clear.net.nz); visit: [www.conservationvolunteers.org.nz](http://www.conservationvolunteers.org.nz)

**AidCamps International** offers **short-term volunteer work overseas on Third World development aid projects**. Kenya, Cameroon, India. Schools and health centres. visit: [www.aidcamps.org](http://www.aidcamps.org)

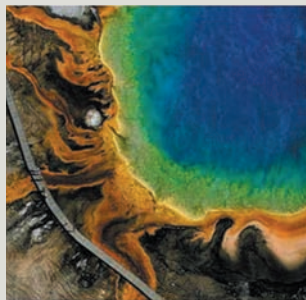
### WANTED

**Do you fancy a free break away?** ITV is making a new holiday series and wants to speak with families who have been on **eco/ volunteer/ charity holidays** abroad or in the UK. Please call Samantha Williams for more information on **020 7013 4588** or email: [samantha.williams@rdmedia.com](mailto:samantha.williams@rdmedia.com)

### DOWNHAM CYCLE TAXIS

People-powered rickshaws serving the communities of Lewisham and Bromley while protecting the environment. Charity 1090053. Donations/funding urgently needed. Write to: Downham Cycle Taxis, The Goldsmiths Centre, London SE6 10D. Tel: 020 8461 3876

## EARTH FROM THE AIR



Spectacular collection of large-scale photographs of astonishing natural landscapes. Created by world-famous photographer Yann Arthus-Bertrand. Free open-air exhibition in the gardens of the National History Museum, Kensington, London. 10am-8pm daily. [www.earthfromtheair.com](http://www.earthfromtheair.com)

## JUNE

### 27-28 JUNE, NATIONWIDE, UK

**Scale up for Trade Justice.** To influence the government's position at Cancun's WTO meeting this September, help lobby every one of the UK's MPs this summer, and ensure that decision-makers are bombarded with letters calling for trade justice. visit: [www.tjm.org.uk/scaleup](http://www.tjm.org.uk/scaleup)



### 28 JUNE, WARWICKSHIRE, UK

**Fluoride – just say No!** Find out how to oppose the plan for state-sponsored mass poisoning, how to minimise your exposure to fluoride and how to legally withhold your consent; £25 (Non-profit-making); 10.00am-3.30pm; HDRA Ryton Organic Gardens, Coventry. Tel: 01455 828778; or email: [fluoridexposure@hotmail.com](mailto:fluoridexposure@hotmail.com); Booking: [www.npwa.freeserve.co.uk](http://www.npwa.freeserve.co.uk)

## JULY

### 1 JULY, LONDON, UK

**The World Trade Organisation, Poverty and Global Apartheid.** The international distribution of wealth has been described as 'global apartheid'. This FREE lecture examines the extent that trade law is complicit in this system; 6pm; the Old Theatre, Old Building, LSE, London WC2. Tel: 020 7955 6043; email: [events@lse.ac.uk](mailto:events@lse.ac.uk)

### 4 JULY, YORKSHIRE, UK

**Independence from America Day. Annual demonstration at Menwith Hill Spy Base 12-4pm.** Campaign for the Accountability of American Bases. Tel: 01943 466405; email: [caab@btclick.com](mailto:caab@btclick.com); visit: [www.caab.org.uk](http://www.caab.org.uk)

### 4-6 JULY ABERYSTWYTH, UK

**Introduction to Renewable Energy.** An overview of the technology and principles behind solar, small-scale wind and micro-hydro power. Centre of Continuing Education, Aberystwyth. £25/35. Tel: 01974 821564; visit: [www.greendragonenergy.co.uk](http://www.greendragonenergy.co.uk)

### 5 JULY, LONDON, UK

**Alternatives to War – Security and Sustainability: two sides of the same coin.** Conference with Anita Roddick, Vandana Shiva and Satish Kumar; City of London School for Girls. Tel: 020 8340 3967; email: [peterlang@resurgence.org](mailto:peterlang@resurgence.org)

### 5-6 JULY, WARWICKSHIRE, UK

**The Organic Food and Wine Fair.** Talks, cookery, music and entertainment. Ryton Organic Gardens, Coventry; £3.95/£1.50. Tel: 0247 6303517; email: [enquiry@hdra.org.uk](mailto:enquiry@hdra.org.uk); visit: [www.hdra.org.uk](http://www.hdra.org.uk)

### 9-11 JULY 2003, SHROPSHIRE, UK

**Rural Life Conference 2003.** Discussions include: encouraging social enterprise; access to local services; and the role of information technology. Acre members: £240; non-members: £295. Tel: 01285 653 477; email: [acre@acre.org.uk](mailto:acre@acre.org.uk)

### 11-13 JULY, PETERBOROUGH, UK

**Willow Festival.** Free entertainment on the banks of the river Nene. Good food, market stalls, bars and extreme rides, children's funfair, quadbikes and riverside picnic. Enjoy. Tel: 01733 346529; visit: [www.willowfestival.org.uk](http://www.willowfestival.org.uk)

### 14 JULY, TOULOUSE, FRANCE

**Naked Vegetarian March** Vegan lunch, concert and festival. If you can't get to France, organise your own action. The event hopes to become a worldwide demonstration to celebrate the vegetarian movement. Tel: (00 33) 16047 1408; visit: [www.veggies.org](http://www.veggies.org)

### 18-20 JULY, GALLOWAY, UK

**Wickerman festival.** 120 acres of isolated farmland, music, free campsite, trade stalls and food. Dundrennan, Galloway, Scotland; £30; tel: 01738 449430; visit: [www.thewickermanfestival.co.uk](http://www.thewickermanfestival.co.uk)

### 27 JULY, SHROPSHIRE, UK

**Ludlow Green Fair – celebrating practical green alternatives, ideas and lifestyle.** Stalls galore, green products and technology, kids' stuff, veggie catering; 10am-4.30pm; tel: 01584 856376; or email: [Savoir-Faire@freenet.co.uk](mailto:Savoir-Faire@freenet.co.uk)

### 27 JULY, UK

**International Bog Day** Pull on your wellies and come to one of the Wildlife Trusts' events on some of the soggiest land in the UK. tel: 0870 0367711; email: [info@wildlife-trusts.cix.co.uk](mailto:info@wildlife-trusts.cix.co.uk); visit: [www.wildlifetrusts.org](http://www.wildlifetrusts.org)

## The Big Green Gathering

### 30 JULY-3 AUG, SOMERSET, UK

**The Big Green Gathering** Powered by the wind, the sun and the people. Tickets £20-£80. Write to: BGG, PO Box 3424, Glastonbury, BA6 9ZN. Tel: 01458 8346729; visit: [www.big-green-gathering.com](http://www.big-green-gathering.com)

## AUGUST

### 8-10 AUGUST, PENRITH, UK

**Wigwam and yurt festival** with guest speakers. Benders, boomers and vegan shoes. Construct your own accommodation. Yogurt weaving and beard plaits late into the night. Free. Tel: 07734 410 264; visit: [www.bringahappy.org.uk](http://www.bringahappy.org.uk)

### 9 AUGUST, DOVER, UK

**Protest against live exports.** Meet at 1pm at the roundabout leading to the Eastern Docks. Organised by Farmed Animal Action. Tel: 0845 4560284; email: [info@farmedanimalaction.co.uk](mailto:info@farmedanimalaction.co.uk)

### 13-17 AUGUST, YORKSHIRE, UK

**Earth First! summer gathering.** Four days for people to talk, share, learn, laugh and conspire; £10. email: [summergathering@yahoo.co.uk](mailto:summergathering@yahoo.co.uk); visit: [www.earthfirstgathering.org.uk](http://www.earthfirstgathering.org.uk)

## JULY AND AUGUST

Visit an organic farm and find out first hand about a farming system that works in harmony with nature. Soil Association organic farms across the country are offering farm walks and open days. See animals close up, enjoy the countryside and stock up with fresh food from farm shops. For your nearest farm, tel: 0117 914 2444; visit: [www.soilassociation.org](http://www.soilassociation.org)



### 25 AUGUST, SURREY, UK

**Carshalton Park Environmental Fair** This year's theme is 'Gardening for Wildlife'. Adults £2, cons' £1, children under 12 FREE; 10.30am-8pm. Ruskin Road, Carshalton; tel: 020 8647 9201; email: [environmentalfair@hotmail.com](mailto:environmentalfair@hotmail.com); visit: [www.thecei.org.uk/efair](http://www.thecei.org.uk/efair)

### 29 AUGUST, CORNWALL, UK

**Surfers Against Sewage Summer Ball.** Live music and 3,000 supporters celebrate one of Britain's best environmental protest groups. Tickets are £30, and this year's theme is 'Atlantis'. visit: [www.sas.org.uk](http://www.sas.org.uk)



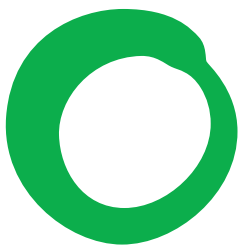


## **The White House and American business should not have the right to decide what we eat in Europe.**

The US is bringing a case to the World Trade Organization arguing that the European Union's moratorium on GM foods is 'illegal'.

This move, almost certainly a result of pressure from the biotech industry, could force the people of Europe to eat GM food when they don't want it.

The European Commission and national governments must find the courage to stand up to this bullying.



**Friends of the Earth**

## **Support Friends of the Earth's campaign to fight for Europe's right to say no to GM.**

**[www.foe.co.uk/gm\\_trade\\_war/](http://www.foe.co.uk/gm_trade_war/)**

Friends of the Earth inspires solutions to environmental problems, which make life better for people

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\* Subject to our agreement. Restrictions may apply. Underpayments are only available using overpaid funds. Payment holidays are available after you have made six monthly payments. Any agreed missed payments could accumulate further interest and could extend the term of your mortgage.

All loans are subject to our lending policy and are available to UK residents (excluding Scottish islands) aged between 18 and 75 years and are subject to status and conditions. We require a first charge on the borrower's home as security and life cover is strongly recommended. Written quotations are available on request. Telephone calls may be monitored/recorded for security/training purposes.

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