



Ecological Debt Day

April 2008



British city residents' eco-debt day

Globally, humans are consuming natural resources at an alarming rate – more than 20% higher than the Earth's capacity to regenerate itself. This rate has been accelerating in the past few decades: around the world, consumption levels are five times the level they were 50 years ago.

Per person, our rate of consumption in the UK is the 14th largest in the world¹. Currently our rate of consumption is three times greater than the Earth can sustain. Put another way, if everyone in the world lived as we do in the UK, we would need three planets to support us.

In contrast, people in many other countries consume far less than their fair share of natural resources, and consequently their quality of life is much lower than it ought to be. This cannot continue. To bring us back within our global share of resources people, businesses and government in the UK must find ways of reducing their ecological footprint.

The solution lies, in part, in addressing the careless way in which we have consumed energy up to now. The potential for making efficiency savings and reducing demand provides us with great opportunities for rapid progress. This potential could be realised most effectively in cities, as they can be the most environmentally efficient places to live. Currently more than half the world's population live in cities. These cities take up only 2% of the Earth's surface but consume 75% of resources used and produce 75% of all waste. Crucially, they produce 80% of the world's greenhouse gas emissions².

Using the latest data available³ WWF has calculated when residents of British cities will have consumed their fair share of natural resources for 2008 – or their 'ecological debt day'. The findings, listed in the Results section below, show that our cities' ecological debt days range from 10 April to 11 May.

WHAT COULD IT MEAN FOR UK CITIES?

“Our urban and city areas are becoming increasingly unhealthy, dangerous and uncomfortable to work and live in. These areas are remarkably vulnerable to global warming; unhealthiness and discomfort from buildings overheating in the summer and increased pollution as well as flooding, subsidence and other effects.”

Professor PD Jones⁴

The overriding environmental issue for cities in the future is climate change, and experts forecast that extreme weather events will become more common.

A predicted increase in the frequency and intensity of heatwaves will make life less comfortable in our cities, with more sticky nights and stifling commutes. But it is likely that they will also lead to an increased death rate – analysis has shown that for every degree rise in temperature above 21.5°C the death rate rises by 3.3%. During the heatwave in summer 2003 the death rate in the UK rose 16%. By 2040, a summer like that of 2003 will be considered average⁵.

Six of the warmest years on record in the UK have occurred in the last 15 years. If this trend continues, city residents could experience more summer droughts, especially in south-east England, leading to increasing water shortages.

¹ WWF, 2006, *Living Planet Report 2006*, http://assets.panda.org/downloads/living_planet_report.pdf

² Defra news release, 2007, *Joint Declaration to Tackle Climate Change*, www.defra.gov.uk/news/2007/071108e.htm

³ WWF, 2007, *Ecological footprint of British city residents*, www.wwf.org.uk/filelibrary/pdf/city_footprint2.pdf

⁴ Details of Grant from Engineering and Physical Sciences Research Council, 2007, *SCORCHIO: Sustainable Cities: Options for Responding to Climate Change Impacts and Outcomes*, <http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/E017649/1>

⁵ Tomorrow's England, 2008, *Our changing climate, our changing lives – the South East*, www.tomorrowsengland.net/data/files/tomorrows_england_south_east_full_report.pdf

Not only are hotter, drier summers forecast but also more frequent and severe storms leading to flash floods as city drainage systems become overwhelmed.

In winter, more floods are expected. And, although the floods of summer 2007 are not attributable to climate change, scientists believe that similar events will prevail as a result of climate change. The floods of the last five years have already cost small and medium businesses in the UK £864 million⁶.

Our living costs will increase. Flood-damaged crops would reduce the food available, and rising fuel prices would result in less food being imported to the UK – both of which would add to the cost of food. The spiralling costs of our energy bills are being fuelled by inefficient household products – for example, a large plasma screen TV can cost up to three times as much to run as a traditional TV. In the last 30 years domestic energy use has doubled⁷.

There may even be changes to the wildlife seen in our cities. For example, with warmer winters and reduced availability of slugs during the summertime, hedgehogs could disappear.

WHAT IS ECOLOGICAL FOOTPRINTING?

We can calculate our Footprint by adding up the hectares it takes to grow our food and farm the animals we eat; the hectares our house stands on; the hectares that oil refineries and other energy infrastructure we depend on take up; the hectares of forest that would be needed to absorb the CO₂ emitted by our fuels; a share of the hectares taken up by our roads; and everything else we do that has an impact on the planet's ecosystems.

Ecological Footprints are measured in global hectares (gha) – the amount of bioproductive land and sea available on the planet. The Footprint counts all the impacts of personal spending as well as the business and government expenditure made on our behalf.

Ecological Footprinting is a measure used to assess sustainability; it is therefore the key to attaining sustainability in the UK and for humanity as a whole.

WHY IS OUR FOOTPRINT IMPORTANT?

Consumerism is driving rapid changes in our world – it is degrading forests and accelerating animal extinctions. Almost every indicator of the health of our planet's natural systems shows that they are no longer able to adjust to the consequences of human activities⁸.

We all rely on natural resources for our food, clothes and other products. Without these resources our economies would simply not function. This is true even in a developed economy such as we have in the UK.

Human pressure is already threatening many of the planet's assets. 'Business as usual' is likely to accelerate these negative impacts on the very systems that we rely on for survival. People are turning resources into waste faster than nature can turn waste back into resources.

It is too simplistic to say that we are running out of resources: the threat we face is greater than this. For the first time in history, human beings have acquired the power to undermine the natural systems that sustain life on Earth⁹.

⁶ Tomorrow's England, 2008, *Our changing climate, our changing lives – the South East*, www.tomorrowsengland.net/data/files/tomorrows_england_south_east_full_report.pdf

⁷ Tomorrow's England, 2008, *Our changing climate, our changing lives – the South East*, www.tomorrowsengland.net/data/files/tomorrows_england_south_east_full_report.pdf

⁸ WWF, 2007, *A One Planet Future*, www.wwf.org.uk/filelibrary/pdf/oneplanetfuture.pdf

⁹ WWF, 2007, *A One Planet Future*, www.wwf.org.uk/filelibrary/pdf/oneplanetfuture.pdf

Globally the news is increasingly dominated by environmental issues – from climate change, droughts and floods to declining fisheries, dwindling tropical forests and extinct species. These are such big issues that individually our impact may seem insignificant. However, a solution requires people to take individual action to break down that large footprint. We need to change the way we live to combat climate change, conserve the world's forests and protect our oceans.

Planet Earth is all we have. It provides our food, water and fresh air. Its riches clothe us and heat our homes. And its beauty gives us pleasure and places of recreation. The Earth acts as a bank for all those resources we rely on to live happy, comfortable lives.

WHY DOES THE UK MATTER?

The UK holds a unique place in the world that gives it influence beyond its size. This is partly because it is a global financial centre and is in the European Union – the largest trading block in the world – but also because of its role in the Commonwealth, the United Nations' security council, and the G8.

The UK also has a historical responsibility as one of the first industrialised countries, meaning that it has long been releasing large quantities of carbon dioxide (CO₂) into the atmosphere. Now, in a world so acutely aware of the threats and impacts of increasing levels of CO₂, the UK must play its part in fighting climate change itself as well as assisting other countries.

Britain has taken a leading role in the Kyoto protocol and the UK government was the first in the world to commit to enshrine in law a 60% cut in carbon emissions by 2050.

However, the overwhelming scientific consensus is that the target in the UK government's Climate Change Bill is inadequate to avoid the worst ravages of climate change. It is essential that atmospheric greenhouse gas concentrations are stabilised at a maximum of 450 parts per million of CO₂ equivalent to avoid irreversible and extremely damaging climatic changes. This would require all developed countries to cut emissions by at least 80% from 1990 levels by 2050¹⁰.

WHAT CAN WE DO?

If everyone in the world lived as we do in the UK, we would need three planets to support us. This means that we are consuming an equivalent of two planets' worth more than our fair share of resources. Reducing consumption is the key to bringing down our Ecological Footprint. But even after we've reduced our own personal footprints as far as we can – on average, a cut of about a third of our consumption is realistic – a further reduction of a third more is required. This relies on changes being implemented by government and business.

Everything we spend our money on has the potential to cause harm somewhere in the world. But by increasing our understanding of these potential impacts and changing our actions and choices we can reduce our negative environmental impacts while maintaining a good quality of life. Indeed, by choosing responsible products and companies we can have a positive impact.

The first step in reducing your footprint is to see what your current levels of resource use are. A simple way to do this is to use WWF's online footprint calculator¹¹. This also provides 170 suggestions on ways of living a more environmentally friendly life.

¹⁰ WWF, 2008, *Get on board*, <http://getonboard.wwf.org.uk/index.php>

¹¹ <http://footprint.wwf.org.uk>

Start at home

We cannot meet our climate change targets without tackling the emissions from our homes. Many of the measures that will enable us to do this also improve the quality of our homes and will reduce energy bills. It is clearly vital to tackle this area appropriately, and as a matter of urgency.

Our homes are responsible for 27% of all CO₂ emissions in the UK¹². Of these, just over half result from heating our homes, a fifth from running appliances (including cooking), a further fifth for heating water and 8% for lighting¹³.

Technological advances, such as condensing boilers or more efficient lighting, can help us to lead more sustainable lives, but we also need to cut back on our consumption.

This means changing our habits. Leaving DVD players and TVs on standby overnight means we are wasting energy while we sleep. Switching them off at the socket when we go to bed cuts this waste.

Harder habits to break are our addiction to our cars. Nipping to the shops by car, or our daily commute of a few miles all contribute. To break this dependency we could ditch the car – something most easily done in cities. We can reduce our car footprint gradually by buying the most efficient cars available and also by changing our habits – car sharing to work, and cycling or walking to work once a week.

However, we cannot be sustainable on our own. As individuals we are locked into unsustainable patterns of consumption through the choices provided by government and business. If there is not a sustainable choice when shopping – such as garden furniture made from Forest Stewardship Council accredited timber – we will not be able to lower our footprint enough. If the government builds hospitals and schools that are energy inefficient, we will be locked into unsustainable consumption patterns for the lifetime of those buildings. Or if the government does not provide us with adequate recycling services our levels of waste increases, as we are forced to dispose of recyclable materials.

THE TOP 10 WAYS TO REDUCE YOUR ECOLOGICAL FOOTPRINT

Even busy people can cut their Ecological Footprint by using WWF's top 10 tips below. For an interactive way of reducing your footprint, log on to www.wwf.org.uk/calculator

1. Don't drive when there is an alternative – use public transport, cycle or walk

On average we can reduce our Ecological Footprint by as much as 20% if we don't own and drive a car. Using it less will reduce your footprint.

In 2005, four-fifths of the distance travelled in the UK was by car. Between 1996 and 2005 emissions of CO₂ from private cars rose by 4% and the distance travelled by car rose by 10%. In contrast, the number of walking trips fell by 16% and the average number of bicycle trips per person per year dropped by 20%¹⁴.

¹² Defra, 2007, *The environment in your pocket 2007*, www.defra.gov.uk/environment/statistics/eiyp/pdf/eiyp2007.pdf

¹³ WWF, 2008, *How low – achieving optimal carbon savings from the UK's existing housing stock*, www.wwf.org.uk/filelibrary/pdf/how_low_report.pdf

¹⁴ National statistics, *Travel and tourism*, www.statistics.gov.uk/cci/nugget.asp?id=24

2. Grow vegetables and don't waste food

Combining these actions could reduce our footprint by 11%. Growing our own fruit and vegetables reduces all the energy and waste that normally goes into getting food from the field to our plates – such as transport, refrigeration and packaging. Allotments are becoming more fashionable and sites are available across the UK, helping us to lead a healthier life.

Planning a weekly menu ahead of time and shopping with a list allows us to better estimate how much food we need and ensure we don't waste anything by impulse buying. It saves money and wastes less food. Planning ahead also avoids unnecessary extra trips to the supermarket and therefore cuts down on travel emissions.

3. Instead of flying, take holidays in the UK or travel to Europe by train

Aviation has the fastest-growing carbon emissions of any industry sector. What's more, flying has an even greater impact on climate change than was previously thought, as emissions of greenhouse gases at high altitudes have between two and four times more impact on climate change than those at ground level.

Flights cause a large and growing part of our collective Footprint. For example, a single passenger's share of a return flight from London to New York has nearly four times greater impact on the climate than the average person in India has in an entire year¹⁵.

Europe is now easier to reach by train than ever before. A passenger on a flight to Paris is responsible for 10 times more CO₂ emissions than a person using the Eurostar; and the flight takes longer once checking in and travel to the city centre are taken into account.

4. If you need a car, make it a small one and reduce the mileage

Over a quarter of all car journeys made in the UK are less than 3km. Smaller, and indeed smaller-engined, cars are usually much more energy-efficient than larger ones, and also have cheaper road tax.

Walking, cycling or taking public transport instead will help reduce congestion and CO₂ emissions and will also reduce our overall Footprint. Many people are discovering the benefits of public transport. In the last 10 years the distance travelled on London buses has increased by 37%. The distance travelled by rail has increased by 34%.

5. Instead of buying new things, buy second-hand or borrow

On average 10% of our Footprint is made up of the things we buy. Our houses are often cluttered with items we only use or wear a few times. The average drill is used for just 15 minutes in its lifetime.

While babies need certain clothes and equipment to survive and be stimulated, they only tend to need them for a few months or a year before they have grown out of them.

Rather than buying something, consider whether you could hire or borrow one instead.

6. Make your home energy efficient – install insulation and double glazing

This tip is common sense and one of the simplest to follow. We all want pleasant, warm homes so why do we persist in living in houses that are draughty and that rapidly lose heat through

¹⁵ Calculation based on www.atmosfair.de/index.php?id=9&L=3

uninsulated walls and roofs? Improving your home's insulation, which can be quick and easy, will normally repay the cost in reduced energy bills within a few years.

Many other measures not only reduce your footprint but also save you money. For example, turning appliances off instead of switching them to standby could save the UK £700 million in energy costs each year.

7. Turn the thermostat down

By turning down your thermostat by just one degree you could cut your heating bills by 10%. Turning it down by four degrees could cut the average home's Ecological Footprint by 5%.

A well-insulated home will retain more heat. You can achieve this with measures from drawing your curtains at dusk to installing cavity wall insulation. Other ways to help make your home heat efficient include turning down the heating in rooms you are not using and keeping doors shut to stop heat dispersing round the house and being wasted.

8. Vegetarian diet

The Ecological Footprint of vegetarians who eat a moderate amount of milk and eggs could be 40% lower than their counterparts who consume a low-meat diet¹⁶.

Other research shows that 16,000 litres of water is needed to produce one kilo of beef – which is over five times that needed to grow a kilo of rice¹⁷.

9. Buy locally produced organic food

In the UK, we import more than half the food we consume. Buying locally-grown, seasonal food would mean we could reduce our food miles and use less packaging to preserve fresh produce. Food that has been transported half way around the world can never have a small Footprint, although its impact can sometimes be lower than intensively produced local food. A bonus is that the freshest food – unprocessed, locally grown and in season – is also food with a low Footprint.

Organic and other forms of low-input farming that use minimal or no pesticides and fertilisers – which are energy intensive in their manufacture – consume up to 40% less energy, and support higher levels of wildlife on farms. Organic and other more holistic farming approaches tend to prioritise animal welfare more than conventional methods do.

However, it is vitally important that we consider the value of fairly-traded products as a means of income for producers in developing countries. Therefore, when you do buy produce from overseas try to buy from fairly-traded sources.

10. Recycle everything

The average UK home throws away more than one tonne of materials every year. To cut down on waste, avoid over-packaged products when shopping, donate unwanted items to charity shops, use your kerbside recycling collection, and find out where you can recycle items that are not collected (www.recycle-more.co.uk).

¹⁶ Sibylle Frey and John Barrett, 2007, *Our health, our environment: The Ecological Footprint of what we eat*, www.brass.cf.ac.uk/uploads/Frey_A33.pdf

¹⁷ Water footprint, www.waterfootprint.org/?page=files/hom

ECOLOGICAL DEBT DAY

Each year Ecological Debt Day is calculated. This is the date when humanity's demand exceeds global biocapacity (the ability of ecosystems to create resources and absorb waste). In 2007 it was on 6 October – reflecting global over consumption of over 20%¹⁸.

In the UK our consumption rate far exceeds the global rate. If everyone in the world lived as we do in the UK, we would need three planets to support us.

Ecological debt day is the day that an individual, a group of people – such as residents of a city – or humanity use up their fair share of natural resources for the year. For the rest of the year they will either consume other people's fair share of the Earth's resources or contribute to the unsustainable global 'overdraft', which currently stands at over 20%.

RESULTS

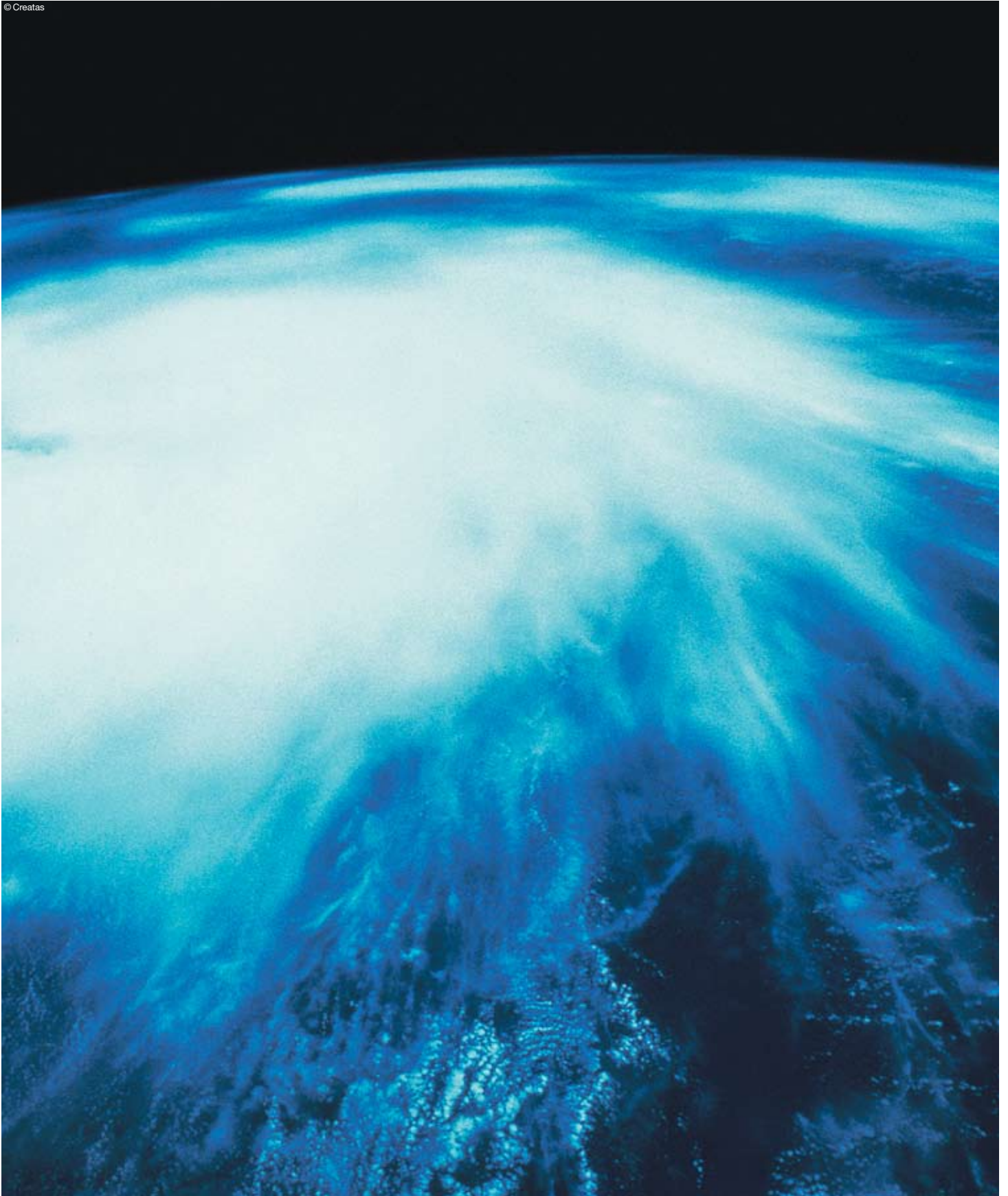
The ecological debt days in the table below were calculated based on data derived from a recent WWF report¹⁹, which showed the average citizen's Ecological Footprint in each British city.

City	Eco debt day 2008
Newport	11 May
Plymouth	11 May
Salisbury	10 May
Kingston upon Hull	10 May
Stoke on Trent	10 May
Gloucester	9 May
Wakefield	9 May
Sunderland	8 May
Truro (Carrick)	8 May
Wolverhampton	8 May
Salford	8 May
Swansea	8 May
Coventry	7 May
Exeter	6 May
Cardiff	6 May
Glasgow	6 May
Bradford	5 May
Lincoln	5 May
Birmingham	5 May
Bristol	5 May
Liverpool	4 May
Nottingham	4 May
St Davids (Pembrokeshire)	4 May
Bangor (Gwynedd)	4 May
Worcester	4 May
Leicester	4 May
Carlisle	4 May
Derby	4 May
Sheffield	3 May
York	3 May
Leeds	3 May
Dundee City	3 May
Peterborough	2 May
Norwich	2 May
Preston	2 May

¹⁸ Global Footprint Network, http://www.footprintnetwork.org/gfn_sub.php?content=overshoot

¹⁹ WWF, 2007, *Ecological footprint of British city residents*, wwf.org.uk/filelibrary/pdf/city_footprint2.pdf

Inverness (Highland)	2 May
Manchester	2 May
Ripon (Harrogate)	2 May
Bath (Bath and North East Somerset)	1 May
Wells (Bath and North East Somerset)	1 May
Newcastle upon Tyne	30 April
Lancaster	30 April
Lichfield	29 April
London	29 April
Stirling	28 April
Hereford (County of Herefordshire)	28 April
Ely (East Cambridgeshire)	26 April
Aberdeen	24 April
Chester	24 April
Edinburgh	23 April
Portsmouth	23 April
Cambridge	23 April
Durham	22 April
Southampton	21 April
Oxford	17 April
Canterbury	17 April
Brighton and Hove	14 April
Chichester	14 April
St Albans	13 April
Winchester	10 April



The mission of WWF is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- reducing pollution and wasteful consumption



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