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Ecological footprint

of British city residents

What we can do to reduce ours

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Background note on the authors
CarbonPlan is an environmental consultancy which champions sustainable development in business. It specialises in working with business organisations to implement programmes to understand, measure and reduce the carbon and ecological impacts associated with both their business operation and office premises or estate.

In conjunction with Bristol Zoo Gardens and the National Wildlife Conservation Park CarbonPlan developed SALOME – a structured process to allow visitor attractions to systematically reduce impacts and move towards sustainability.

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INTRODUCTION

The choices we make in our everyday lives about our homes, transport, food and the goods we buy have impacts right across the world – from Indonesian rainforests to the Antarctic. The amount we consume has a direct effect on climate change and species loss. For example, the products we consume in the UK could be flown in from half way around the world and be made using raw materials from somewhere else where species are under threat from loss of habitat.

If everyone in the world generated carbon emissions and consumed natural resources at the rate we do in the UK we would need three planets to support us. Cumulatively, all of our individual footprints – our impact on the world's natural resources – make up the bigger picture.

We need to understand our impacts on the natural world in the fight against species loss and climate change. We need to change our patterns of consumption to combat climate change, conserve the Amazon rainforest and protect our oceans. We must become active citizens and conscious consumers, aware of the consequences of our actions and the purchases we make. But it's not just us. Government and business also have their part to play by introducing policies and products that allow us to lead better quality lives, for example by providing comprehensive recycling facilities or environmentally friendly products.

This report highlights individuals' consumption by ranking the 60 cities in Britain by the average Ecological Footprint of their residents.

WHAT IS AN ECOLOGICAL FOOTPRINT?

An Ecological Footprint is a measure of the amount of bioproductive land and sea required to support a person's lifestyle. It includes the land needed to grow their food, dispose of their waste and absorb their carbon emissions. The footprint counts all the impacts of personal spending as well as the business and government expenditure on their behalf.

Biggest and smallest footprints

England	City	Planets	Footprint gha
Smallest five	Plymouth	2.78	5.01
	Salisbury	2.79	5.01
	Kingston upon Hull	2.79	5.02
	Stoke on Trent	2.79	5.03
	Gloucester	2.81	5.06
Largest five:	Canterbury	3.40	6.12
	Brighton and Hove	3.47	6.25
	Chichester	3.49	6.28
	St Albans	3.51	6.31
	Winchester	3.62	6.52
Scotland			
Smallest:	Glasgow	2.89	5.21
	Dundee City	2.96	5.33
	Inverness	2.97	5.35
	Stirling	3.08	5.54
	Aberdeen City	3.18	5.73
Largest:	Edinburgh	3.20	5.76
Wales			
Smallest:	Newport	2.78	5.01
	Swansea	2.84	5.12
	Cardiff	2.89	5.20
	St Davids	2.92	5.26
Largest:	Bangor	2.93	5.27

KEY ISSUES:

Income and total footprint

People in richer cities spend more – on cars, houses, eating out, etc – which leads to a larger footprint. A simple comparison between the top and bottom cities in each country makes this clear: well-off cities such as Edinburgh tend to have larger footprints, while less well-off cities such as Glasgow have smaller ones.

Housing footprint

Housing is the sector that makes up the largest proportion of our individual footprint. It accounts for 28% of the average per capita footprint. Again the biggest predictors of a large footprint are

having a higher income and a large house. This can be addressed, in part, by installing energy efficiency measures such as draught-proofing and insulation.

Transport footprint

The difference between the transport footprint of London and that of St Albans is striking. The average resident's transport footprint in St Albans is 55% bigger than the London average. Public transport, low levels of car ownership and policies to discourage large, polluting cars are behind London's lower transport footprint. Within London most commuting is by public transport. High levels of commuting from St Albans (particularly by car rather than public transport) into London are partially to blame for St Albans' high transport footprint. Some can reduce their transport footprint by spending more time working from home.

RECOMMENDATIONS

1. Measure your footprint and set annual targets to reduce it

It is much easier to reduce your footprint if you know what you are consuming and are aware of its effect. Measure your personal environmental impact and find out the best ways to reduce it at wwf.org.uk/calculator.

2. Make your home as energy efficient as possible

This is one of the simplest tips to follow. Many measures can not only reduce your footprint but also save you money. For example, turning appliances off instead of switching them to standby, or improving your home's insulation.

3. Join with others who are reducing their footprint (and encourage those who are not)

There is evidence showing that people who try to reduce their footprint have more success if they are part of a group. So join a local group trying to do this, for example a Carbon Rationing Action Group, or one of Global Action Plan's eco-teams[1].

4. Think before you spend

Most of our footprint is down to the things we buy. Our houses are often cluttered with items we only use or wear once. The average drill is used for just 15 minutes in its lifetime. Rather than buying something, consider whether you could hire or borrow one instead.

5. Holiday closer to home

Flights comprise a large and growing part of our collective footprint. One passenger's share of a return flight to Australia will have the same impact on the climate as it takes to heat and power the average home for six years. Europe is now easier to reach by train than ever before. A passenger on a flight to Paris is responsible for 10 times more CO_2 emissions than a person using the Eurostar.

[1] These are groups of up to eight households who follow a four- month programme of work to reduce their environmental impacts. www.globalactionplan.org.uk/index.cfm?TERTIARY_ID=0&PRIMARY_ID=31&SECONDARY_ID=38&PERMISSION_ID=11

CONCLUSIONS

Reducing consumption is the key to bringing down our Ecological Footprint. There is a link between cities that have the biggest disposable incomes and the cities with the biggest footprints per person.

The link is not an automatic one: some well-off cities have a footprint that is smaller than might be expected. Salisbury has a one of the lowest footprints in the UK but high house prices and wages. Where action is being taken the footprints reflect this. London's transport footprint is a case in point.

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 the way we do things and our choices we can reduce the negative environmental impacts while maintaining our lifestyle. What is needed is to step outside of the cycle of conspicuous consumption. People need to become active citizens – taking positive actions in their own lives as well as in their community to reduce their own footprint – and use their money wisely. By choosing responsible products and companies we can have a positive impact.

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 two extra planets' worth of resources. But even after we've reduced our personal footprints as far as we can – which on average is about a third of our consumption – there remains a third that is linked to government and business decisions. As individuals we are locked into unsustainable patterns of consumption through the choices provided by government and business. For example, out of town shopping centres require in more people to drive to the shops. A step change is needed if we are to leave behind an unsustainable system that is over-consuming resources. There would be positive benefits to government and business if they were to take these considerations on board, such as reduced costs and increased efficiency.

Collectively, individuals must put pressure on government and business to make them change. One of the best ways to do this is to join organisations that are working with or lobbying local authorities, MPs and businesses to help stop our ever-growing ecological debt.

Introduction

The battle for the environment will be won or lost in our cities. More than half the world's population now live in cities. These cities take up only 2% of the Earth's surface but consume 75% of resources and produce 75% of all waste. However, environmentally they can be the most efficient places to live.

This report into the ecological footprint of people in British cities was commissioned by WWF to highlight the ways in which we are living unsustainably and proposes opportunities for change. It presents information about the average ecological impact caused by inhabitants in each of those cities.

We are on the cusp of the sixth wave of mass extinction that the Earth has experienced[2]. Tracking of this degradation shows around a 30% decline in populations of terrestrial, marine and freshwater vertebrate species between 1970 and 2003[3]. This year The World Conservation Union (IUCN) warned that "life on Earth is disappearing fast and will continue to do so unless urgent action is taken"[4].

This makes depressing reading. What is driving the decrease in species populations? The answer lies on our doorsteps. It is our consumption of resources. Our consumption here in Britain has impacts across the world, from our consumption of palm oil that is degrading the forests in Indonesia to our emissions of carbon dioxide that are helping to warm the world and melt the Antarctic ice sheet. There is an inextricable link between over-consumption and species loss[5]. The more we consume, the greater the demand on the environment and the higher the level of species loss.

The impacts are both direct, such as the loss and degradation of forest habitat, and indirect – through increasingly acute climate change. There is a real imperative for action: a key WWF report[6] shows that it is still possible to avoid a climate change catastrophe, but the world has just five years to put the first big changes in place.

The British economist and academic, Sir Nicholas Stern, in his government review of the economics of climate change highlighted that we don't have a choice about whether to embark on this journey to combat climate change. We do have choices about how soon we should begin and how fast we should travel[7]. But Sir Nicholas also pointed out that it's much cheaper to act today than wait until tomorrow.

Orang-utans in Sumatra are now listed as critically endangered. Their habitat is under severe pressure from the cultivation of palm oil, used in many products including shampoo, margarine and biofuels. Logging for desirable tropical hardwoods is also squeezing the orang-utan's habitat.

All of these products often find their way to Britain. This is a direct link from the footprint of our consumption at home to species loss elsewhere in the world.

[2] Physorg.com, 23 February 2006, *Mass extinction of species has begun,* www.physorg.com/news11151.html

[3] Global Footprint Network WWF and ZSL, 2006, *Living Planet Report.*

[4] IUCN, 12 September 2007, 'Extinction crisis escalates: Red List shows apes, corals, vultures, dolphins all in danger'. www.iucnredlist.org/wnew/

[5] Millennium Ecosystem Assessment, 2005, *Ecosystems and human well-being, our human planet.*

[6] WWF Energy Task Force, 2007, *Climate Solutions: WWF's Vision for 2050.*

[7] Stern, N, 2006, *The Stern Review on the Economics of Climate Change.*

This unsustainable use of the planet's natural resources by consumer societies, such as ours in Britain, is the driving force behind many environmental problems. If everyone in the world generated carbon emissions and consumed natural resources at the rate we do in the UK, we would need three planets to support us.

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.

"Humanity is no longer living off nature's interest, but drawing down its capital. This growing pressure on ecosystems is causing habitat destruction or degradation and permanent loss of productivity, threatening both biodiversity and human well-being."

WWF Living Planet Report 2006

Cumulatively, all our individual footprints make up the unsustainable total demand. The solution to this problem is for 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.

No-one wakes up in the morning and consciously decides to contribute to global warming; to help cut down a tropical rainforest; or to deprive future generations of a decent standard of living. But seemingly innocent decisions we make every day often have these unforeseen, far-reaching and long-lasting consequences.

People are beginning to recognise that we need to change the way we treat the planet. Our patterns of consumption need to change. But that doesn't mean our quality of life will get worse; indeed some of the steps and solutions in this report could help to improve it. For example, playing an active part in local groups increases our community engagement and gives us an opportunity to share ways of reducing the footprints we leave on the planet.

This report highlights individuals' consumption by ranking the 60 cities in Britain by the average Ecological Footprint of their residents.

Once people understand the impact of their actions they become empowered to do something about it. Half the battle is making people realise that there is a problem with the way we are living our lives.

Individuals, government and business all have their part to play to make sure we are living within the means of the planet's resources.

To assist in taking people on a journey towards levels of consumption that our one planet can sustain, WWF has developed an online calculator (wwf.org.uk/calculator). The calculator provides a simple means of measuring our Ecological Footprint and enabling people to take practical steps to reduce it. The website also provides tailored eco-tips and has a forum to help answer those tricky issues, such as dealing with food packaging, or deciding whether to fly or not, and allows users to find out how other people are reducing their impacts.

What is the issue?

We now live in a world where more intense weather, patterns of droughts and floods are becoming commonplace, as are overexploited fish stocks, destroyed forests and dried up rivers. The era of post-war consumerism, where humanity lived in a world rich in resources that were thought boundless, is closing as ecological limits become apparent around the world.

We have to face the fact that our consumption of everyday products has a global impact. Palm oil used in shampoos and margarines comes from plantations where virgin tropical forests once stood. World fisheries are being stretched to the limit due to overfishing by overly-efficient fleets.

Sea level rise as a result of global warming is displacing thousands of people from their homes and flooding tiger habitat in the Sundarbans – a mangrove delta on the border between India and Bangladesh. It is also threatening to submerge islands in the Pacific.

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 to survive. People are turning resources into waste faster than nature can turn waste back into resources. As a global community we are consuming around 25% more than the world can sustain (see Figure 1 and 2 below). This can be kept up for a limited length of time, but if action is not taken to restore the natural balance then ecological systems will start to collapse and environmental conditions will become much worse than those we currently experience.

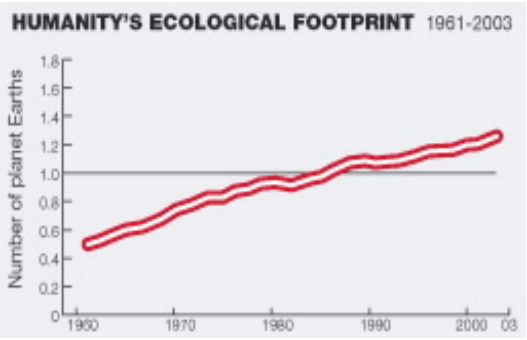


Figure 1: Humanity's Ecological Footprint. This compares the resources mankind uses with the ability of the Earth to provide them. Currently we need around 1.25 planets to supply the resources we use.

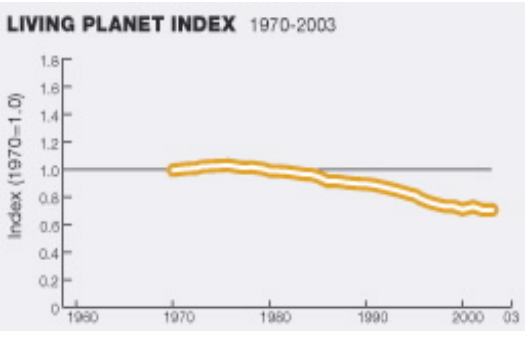


Figure 2: Living Planet Index. This shows trends in populations of terrestrial, marine, and freshwater vertebrate species. It declined by around 30% between 1970 and 2003.

We are stretching all kinds of ecological boundaries – through climate change, overfishing, loss of freshwater resources, and deforestation.

The results are already being experienced across the world:

- Europe has already warmed by almost 1°C over the past century, faster than the global average. The heatwave in summer 2003 caused an estimated 70,000 premature deaths in the EU[8].
- More than 70% of fisheries are either overfished or are fished at their maximum capacity[9].
- Conflicts are already occurring between pastoralists and farmers in Africa[10].
- Himalayan glaciers are disappearing – these glaciers supply over a billion people with fresh water during the dry season[11].
- Deforestation rates of around 13 million hectares per year far outweigh a planting rate of four million hectares. The deforestation that occurs is often in the areas of the planet that are richest in species, whereas planting often takes the form of monocrop plantations, resulting in species-poor areas.

All of these problems are symptoms of environmental degradation. The underlying cause is unsustainable living. Ecological Footprinting is a measure used to assess sustainability; it is therefore the key to realising sustainability in the UK and for humanity as a whole.

[8] EUROPA, 29 June 2007, *Climate change: Europe must take adaptation measures to lessen impacts of current and future warming,* www.europa.eu/rapid/pressReleasesAction.do?reference=IP/07/979&format=HTML&aged=0&language=EN&guiLanguage=en

[9] FAO, 2005, *Review of the state of world marine fishery resources,* ftp://ftp.fao.org/docrep/fao/007/y5852e/y5852e00.pdf

[10] NETWAS, September 2005, *Water Conflicts in Tana River District, Kenya,* www.netwas.org/newsletter/articles/2005/09/4

[11] UNEP, 5 June 2007, 'Fast Melting Glaciers from Rising Temperatures Expose Millions in Himalaya to Devastating Floods and Water Shortages'. www.unep.org/Documents.Multilingual/Default.asp?DocumentID=512&ArticleID=5600&l=en

What is Ecological Footprinting?

Most people now know what a carbon footprint is. It is a measure of how much CO_2 is emitted as a result of all aspects of our everyday lives. This is a good way of measuring the impact our lifestyle has on the Earth. However, although CO_2 emissions make up around 70% of the Environmental Footprint of developed countries such as the UK, we impact on the planet in other ways than just our carbon footprint. Our Ecological Footprint is a combination of all the things we do that require us to draw on natural resources. It includes the impact from our homes (e.g. the oil, gas and electricity we use), transport (e.g. car, train and plane trips), food (e.g. land under cultivation and fertilisers), and consumer goods (e.g. fossil fuel energy used to make and transport goods). In addition, it includes the fossil fuel energy and built land required by government and business to provide infrastructure, goods and services.

> "As of 2003, there are approximately 11.2 billion global hectares of area available. In that same year, humanity demanded products and services from the equivalent of 14.1 billion global hectares.
> This overshoot, if it continues, will put global ecosystems at serious risk of degradation or collapse."
>
> Kitzes et al. 2007

We are now developing the tools needed to assess our impacts on the world and therefore to reduce the negative ones. An Ecological Footprint will show, under prevailing technology, how much land and water area a human population requires to provide the resources it consumes and to absorb its waste.

Ecological footprints are measured in global hectares (gha) – the amount of bioproductive land and sea available on the planet. 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 CO_2 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 ecology.

Some of these are things we can do something about directly ourselves (e.g. ensure that our homes are properly insulated, and use public transport, walk or cycle where possible rather than use our cars). Others are out of our control (e.g. how many new roads are built or whether schools use compact fluorescent light bulbs), though we can still influence them by our investment decisions and by writing to our MPs and lobbying parliament.

We can measure sustainability by comparing the *Ecological Footprint* of a population with the *biocapacity* of the planet to produce these resources in the long-term (i.e. what we use compared to what is available). If we are using resources faster than they can be replenished, then we are living beyond our means and using the planet unsustainably.

The results of studies show that consumption is not evenly spread. It changes from country to country, city to city and person to person. On a country level, research shows that if everyone generated carbon emissions and consumed natural resources at the rate we do in the UK we would need three planets to support us. Some countries with higher Gross Domestic Product per person and longer life expectancy have a lower Ecological Footprint (e.g. Germany, Switzerland and the Netherlands – see Table 1, below). However, even these countries consume at above the world average of 1.25 planets per person.

For now this over-consumption is being balanced by countries that consume less than their 'fair share'. For example, India is consuming at a rate of 0.4 planets per person – only a seventh of the UK's consumption per person. However, those countries that consume at below the sustainable rate will almost certainly increase their footprints as their economies develop.

Table 1: Some standard of living indices compared with consumption

	UK	Switzerland	Germany	Netherlands	India
Planets needed to support consumption rates	3.1	2.8	2.5	2.4	0.4
Infant mortality rate (deaths/1,000 live births)	5.01 (2007 est.)	4.28 (2007 est.)	4.08 (2007 est.)	4.88 (2007 est.)	34.61 (2007 est.)
Life expectancy at birth (years)	78.70 (2007 est.)	80.62 (2007 est.)	78.95 (2007 est.)	79.11 (2007 est.)	68.59 (2007 est.)
GDP – per capita (US$)	$31,800 (2006 est.)	$34,000 (2006 est.)	$31,900 (2006 est.)	$32,100 (2006 est.)	$3,800 (2006 est.)

Source: https://www.cia.gov/library/publications/the-world-factbook

The Ecological Footprint of the UK

If everyone in the world lived like a citizen of the UK does, we would need three planets to provide the resources to sustain us. Therefore the Ecological Footprint of UK citizens can be thought of as three planets. Since we live on one planet, the UK is clearly living in an unsustainable manner.

The diagram below shows how the UK's footprint of three planets can be broken down into three distinct areas – with a planet for each.

First planet of consumption. We have one planet with an abundance of resources. We can use this more efficiently, maintaining our quality of life as well as being sustainable.

Second planet of consumption. This may be accounted for by the personal choices of UK citizens. The main components that make up an individual's footprint can be broken down into four areas: transport, food, homes, and the consumables we buy, such as clothes, jewellery, cameras and TVs.

Third planet of consumption. This comprises government and business infrastructure that requires institutional change if it is to be reduced. As individuals, we are locked in to using these resources because of the way in which our country is run, how our services are supplied, our transport network is operated and our businesses are managed.

By taking simple individual actions in our everyday lives we can reduce our impact on the planet and improve our quality of life. In the UK, our homes account for 27% of our carbon emissions – from gas and electricity use to household appliances – and we already have all the technology we need to substantially reduce this.

For example, by insulating our cavity walls we can cut heat loss in our homes by around a third. It is easily available, cheap and will save all of those homes money in the long run, as well as reducing their impact on climate change. Yet 11 million houses in the UK that could have cavity wall insulation have yet to install it. Other individual actions revolve around our choice of transport, the food we consume – buying locally produced goods – and the quantity of consumable items we buy.

The WWF footprint calculator provides a first step for individuals. Measuring our Ecological Footprint and understanding the drivers behind it is the first step in reducing our impact on the planet.

Reducing our own footprint will go a long way, but is not sufficient in itself, as much over-consumption is embedded in the infrastructure of our society. Infrastructure is not only the layout of our cities, their transport networks, housing, hospitals and schools, but also the way resources are consumed to create and supply us with the products we desire, from vegetables to ipods, socks to cars.

Therefore we need to work with government and business if we are to live within the means of one planet. Reducing our Ecological Footprint personally and across UK institutions is not only better for the planet, but reduces our reliance on other countries, increases our energy security and saves money.

The UK government was the first in the world to commit to enshrine in law a 60% cut in carbon emissions by 2050. However, we will need an 80% reduction, as the scientific evidence continues to show. The Scottish government has now taken the lead by committing to introducing an 80% cut in the upcoming Scottish Climate Change Bill.

We need to become active citizens: as well as taking responsibility for the way we consume in our own lives, we must add our voices to tens of thousands of others to demand that the government introduces environmentally sustainable policies and encourages businesses to ensure their products and practices allow us to lead better quality, sustainable lives. Far from having negative impacts on the UK economy, this presents opportunities for the UK to lead the world in green technology and green practice. The figure below summarises the steps we need to take to reduce resource use in the UK from three planets to one.

Cities have a pivotal role to play in tackling climate change. City councils have the power to deliver better homes, improved public transport and more energy-efficient services. WWF is working with local authorities in the UK to reduce the impact that their cities have on the global environment[12].

In Aberdeen, council officers are using the Ecological Footprint to help plan low carbon communities (www.scotlandsfootprint.org). In London, WWF is helping plan for a One Planet Olympics. Cardiff Council plans to use the findings of its footprint to determine policy and as a tool to brief the local authority on how to meet its sustainable development goals. Sunderland is using Ecological Footprint to help guide its community strategy. The York footprinting study, completed in 2002, calculated the average footprint of each resident. This has helped to guide the City of York Council's overall policy framework, most especially with regard to community planning.

For more information about WWF's work with cities and communities go to wwflearning.org.uk/localmatters.

[12] wwflearning.org.uk/ecological-budget/localauthorities

Calculating a city footprint

The centrepiece of the report is a ranking of the 60 cities in Britain according to the average Ecological Footprint size of their residents. The results are calculated in global hectares (gha) per person and expressed as the Ecological Footprint per capita (EF/cap), rather than total gha for each city, which would favour smaller cities.

The Ecological Footprint (EF) is a measure of natural resource use. It works like an economic indicator in that the available biocapacity per year is equivalent to income. Any resources used beyond this amount can be seen as eating into the environmental capital of the Earth.

The footprint of a region is the area of land and sea required to maintain its levels of consumption, both to provide food and materials and to absorb waste and pollution.

In the old days, environmental impacts and resource depletion issues were generally localised. A village that indulged in unsustainable felling for firewood would soon lose its forest. These days there is a mismatch of location between consumption and the implications of consumption. Ecological Footprinting helps to show people just how much pressure their patterns of consumption are putting on the planet.

SECTORS

To calculate average footprints, the international research group Stockholm Environment Institute (SEI) used spending data for each of the local authorities, and national data, to indicate how resource intensive the lifestyle of the average citizen living there is. The spending data is split into eight sectors: housing, transport, food, consumer items, private services, public services, capital investment, and other.

Housing

Housing includes the physical footprint of the house as well as the impacts of supplying energy services, such as the forested land that would be required to sequester the CO_2 that is emitted by heating and electricity provision.

Transport

A person's transport footprint again counts the CO_2 sequestration land for any fossil fuel energy used. It also contains a share of the total land area under tarmac.

Food

The food footprint includes the land used for food production. This is both primary land used for growing cereals, etc. for human consumption, as well as pasture and land dedicated to providing animal feed. It also includes the sea area required for fishing. Finally the sizeable fossil fuel energy inputs into agriculture are included as sequestration land.

Consumer items

This includes the fossil fuel energy used to make and transport the things we buy that are not food or services – such as electronic goods, clothes, etc. It also includes the land required to extract the minerals and to dispose of the products at the end of their useful life.

Private services

The private services footprint counts the impacts of the business infrastructure we all rely on for facilities such as banking, hotels, pubs and restaurants.

Public services

This is assessed as being the same for each local authority and shares out the fossil fuel energy and built land requirements of government between all the citizens of the country.

Capital investment

Again, this is the same for all local authorities. It refers to the capital depreciation of the infrastructure we all depend on.

Other

This is also the same for all local authorities and includes anything in the national accounts that is not covered by the other categories.

ECOLOGICAL FOOTPRINTING OF CITIES

This report is based on research carried out by the SEI for WWF, which established the average Ecological Footprint (EF/cap) of the inhabitants of all local authorities (LAs) in England, Scotland and Wales[13].

Where city and local authority boundaries coincide, the LA footprints already provide a good indication of the average footprint of an inhabitant of that city. However, where boundaries do not coincide, the EF/cap within the city boundary needs to be separated from the EF/cap outside the city. This is because the average footprint of inhabitants of rural areas is different to that of city dwellers.

This adjustment is made first by finding the average footprint of non-urban LAs adjoining the one that includes the city. That average non-urban footprint is then applied to the rural population of the LA being assessed. (The source for rural/urban split in England is Defra[14]. In Scotland the source is the General Register Office for Scotland[15]. Wales was treated differently as explained below.) This rural footprint is then subtracted from the total footprint of the city LA. Finally, the remainder is divided by the urban population to find the city's EF/cap (see the example of Winchester, detailed below).

London is a special case as it is made up of a number of boroughs. However, as the rural population of all boroughs is negligible (much less than 10%), the average EF/cap of the 32 boroughs is used.

[13] SEI, www.sei.se/reap/local.php

[14] From www.defra.gov.uk/rural/ruralstats/rural_focus/rural_focus_la.htm

[15] www.gro-scotland.gov.uk/files/00settle-t2.pdf

EXAMPLE CITIES

Simple city:

For cities that have negligible rural population (less than 10%), the EF/cap from SEI is sufficient.

Example: Birmingham (0% rural)

Make-up:	Housing	1.52
	Transport	0.83
	Food	1.22
	Consumer items	0.61
	Private services	0.45
	Public services	0.37
	Capital investment	0.24
	Other	-0.01
Ecological Footprint (EF/cap)		**5.22**[16]

Compound city:

In this study, this only applies to London and is easily found as the rural population of London is negligible.

London

Average EF/cap of all London boroughs	**5.48**

Cities within a larger LA:

The 22 cities within LAs with a rural population greater than 10% require adjustment to assess only the city dwellers, as described above.

Example: Winchester

Total LA population	106,070
Percentage of rural dwellers	59%
Rural population	62,581
Urban population	43,489
Average EF/cap of surrounding rural LAs	6.05 gha
Winchester's rural population footprint	378,471 gha
Winchester LA total footprint	661,833 gha
Winchester's urban population footprint	283,362 gha
Winchester city EF/cap	**6.52 gha**

The spreadsheet used to calculate this determines the make-up of the footprint by using the same algorithm on all filters, allowing for comparison between cities.

[16] Does not sum due to rounding.

Bath and Wells

As both Bath and Wells are in the LA of Bath and North East Somerset, using this methodology produces the same EF/cap for both cities. This is a limitation that could be addressed through more detailed data.

Cities in Wales

In Wales, the urban areas of Newport, Cardiff and Swansea were assumed to have negligible rural population. Rural population in Pembrokeshire (St Davids) and Gwynedd (Bangor) were found from the Office of National Statistics[17]. As these cities are so small, and unlikely to have a substantially different character to the surrounding towns and villages, the decision has been taken to use the footprints unadjusted, as with simple cities, above.

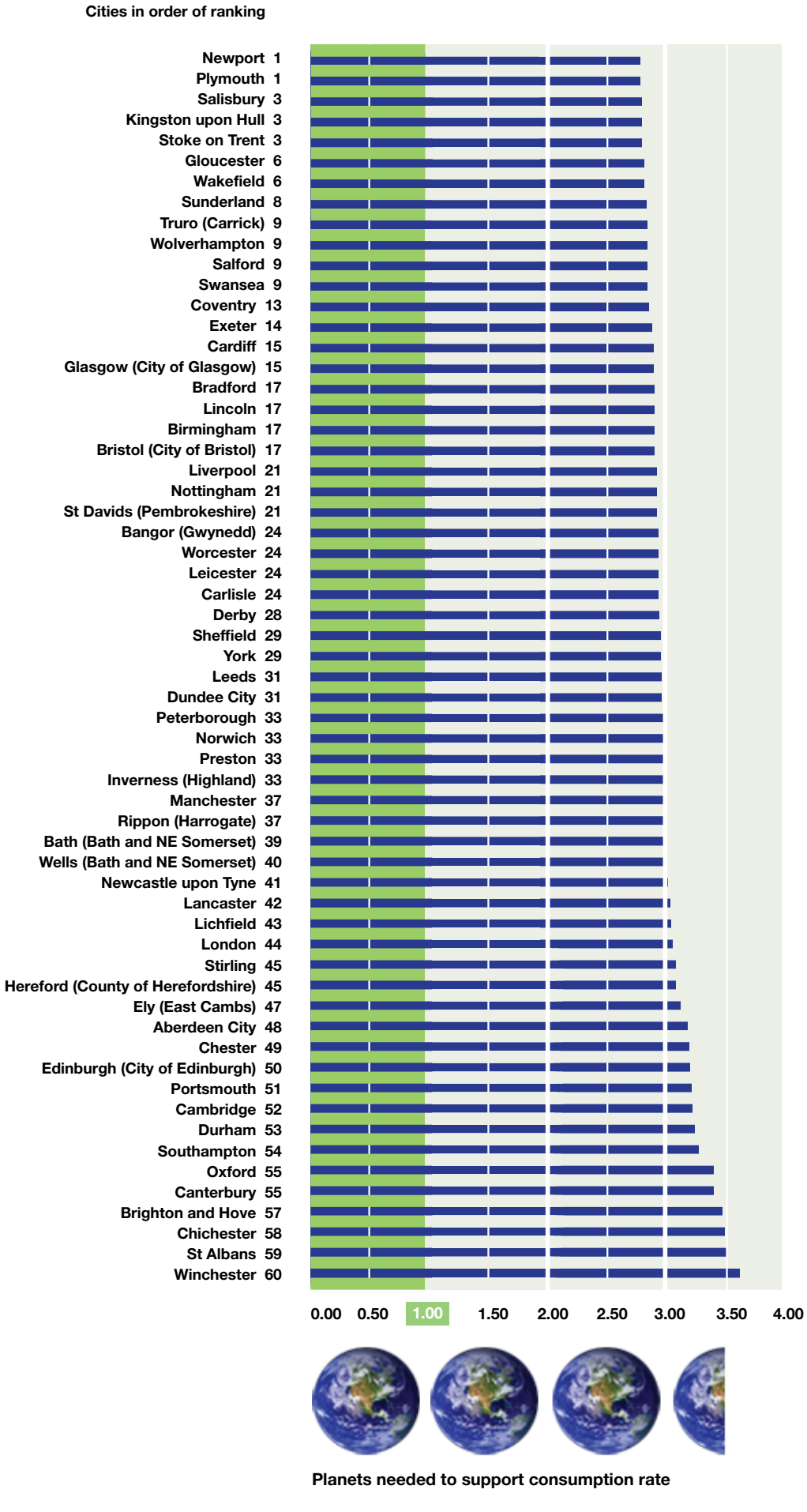
Cities in Northern Ireland

The six cities Northern Ireland have not been assessed in this report since the data available is not of the same quality as those for the rest of the UK.

[17] www.statistics.gov.uk/pdfdir/rural0305.pdf

Results

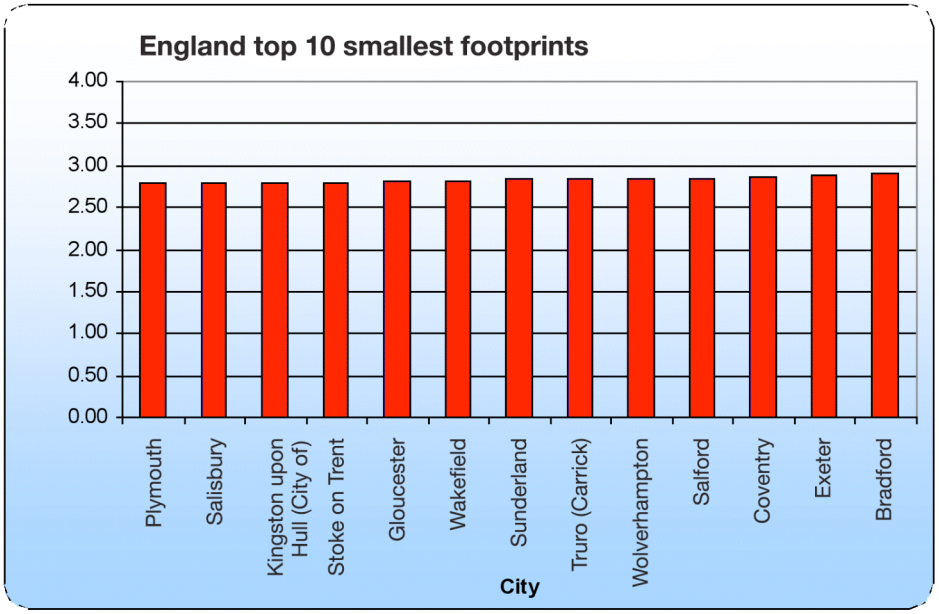
British city residents' footprints ranked

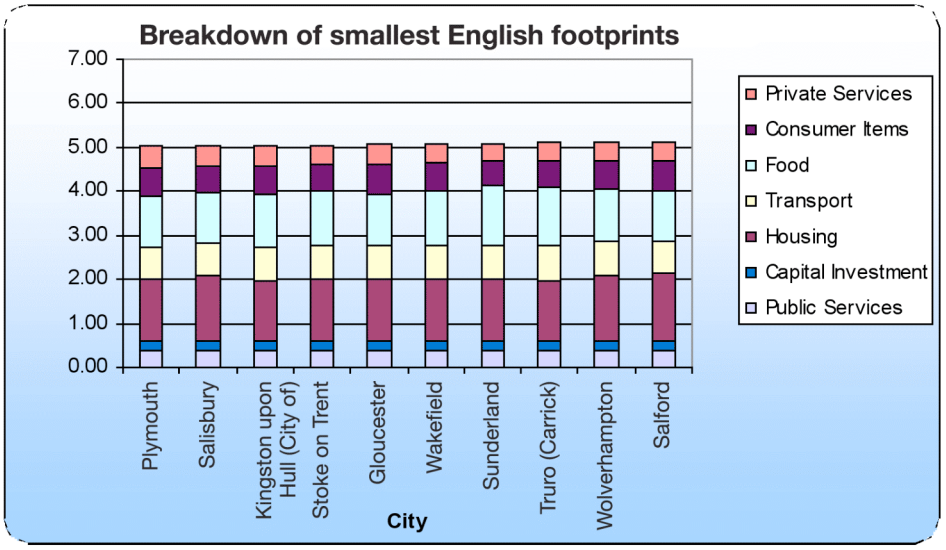


The table shows a clear rise in consumption from the lowest average citizen to the highest, with 0.84 planets between them. While the lowest cities consume under the UK average of 3.1 planets they are still consuming at a rate 2.5 times higher than the planet can support.

ENGLAND – TOP 10 SMALLEST FOOTPRINTS

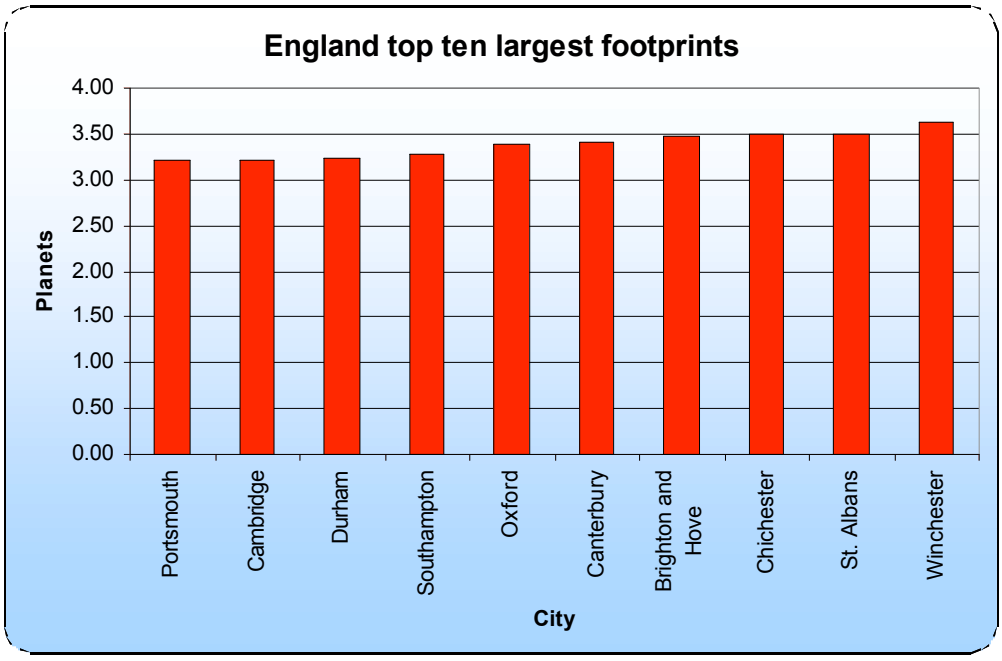
Plymouth	2.78 planets
Salisbury	2.79 planets
Kingston upon Hull	2.79 planets
Stoke on Trent	2.79 planets
Gloucester	2.81 planets
Wakefield	2.81 planets
Sunderland	2.83 planets
Truro	2.84 planets
Wolverhampton	2.84 planets
Salford	2.84 planets

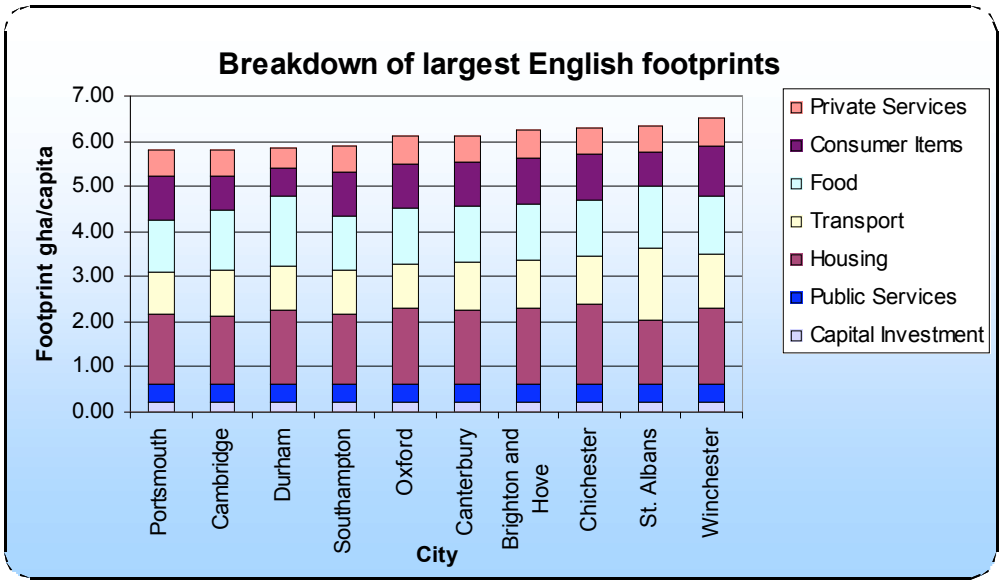




ENGLAND – TOP 10 LARGEST FOOTPRINTS

Winchester	3.62 planets
St Albans	3.51 planets
Chichester	3.49 planets
Brighton and Hove	3.47 planets
Canterbury	3.40 planets
Oxford	3.40 planets
Southampton	3.27 planets
Durham	3.24 planets
Cambridge	3.22 planets
Portsmouth	3.21 planets





ENGLAND – 10 FACTS

1. There are 49 cities in England, which have an average footprint of 3.02 planets. This is smaller than the average footprint in Scottish cities, but larger then that of Welsh cities.
2. The inhabitants of the top-ranked city, Plymouth, have on average 30% lower footprints than the inhabitants of bottom-ranked city, Winchester (2.78 planets and 3.62 planets respectively).
3. Londoners have the second lowest transport footprint (0.72 gha).
4. The citizens of Chichester use almost their entire fair share of global hectares on housing alone (1.77 of 1.8 gha).
5. The citizens of St Albans use most of their fair share just on transport (1.7 of 1.8 gha).
6. Leicester has the lowest food footprint (1.12 gha) while Durham has the highest (1.52 gha).
7. Sunderland uses the least of its footprint on consumer items (0.58 gha); Winchester uses the most (1.11 gha) – almost double.
8. Chichester has a 23% bigger housing footprint than Kingston upon Hull (1.77 gha and 1.37 gha respectively).
9. Sunderland (1.34 gha) and Durham (1.52 gha) both come among the bottom five on food footprints. This is despite Sunderland having one of the smallest overall footprints (5.09 gha) and Durham having one of the largest (5.83 gha).
10. Because of its large population, London's total footprint is 39,500,000 gha – an area the size of Germany and Denmark combined.

CASE STUDY: LONDON TRANSPORT

Sector	Footprint gha	Ranking in Britain
Total footprint	5.48	44
Transport	0.72	2

The transport footprint of Londoners is an interesting case. They have the second lowest transport EF/cap in England despite coming 44th in the list of overall footprints in Britain. This is because London has a good, well-used public transport system at affordable prices. London is at an advantage because it has such a large number of people concentrated in a small area, which makes running public transport a more attractive proposition. There are also disincentives to car ownership in the city, such as limited car-parking and the congestion charge for central London.

However, it should be pointed out that the Home Counties have very large transport footprints. This is most likely due to people commuting into London, as well as the relative level of affluence (which is related to higher levels of car ownership[18]) in the Home Counties.

Working from home or closer to home, and travelling by public transport are more sustainable options than commuting long distances. They also mean less time and money wasted on travelling.

WINCHESTER AND SALISBURY – A COMPARISON

On the surface, Winchester and Salisbury might be expected to be quite similar. They are only 80km apart. Both are old cathedral cities in the south of England, with similar populations (43,489 and 43,608 respectively). In fact, the cities even share similar problems. Both their cathedrals are thought to be becoming more at risk from flash flooding due to climate change[19].

But while Salisbury has the third smallest footprint in Britain, Winchester has the largest. This case study takes a look at some environmental and economic indicators to see what the differences are.

Ecological Footprint

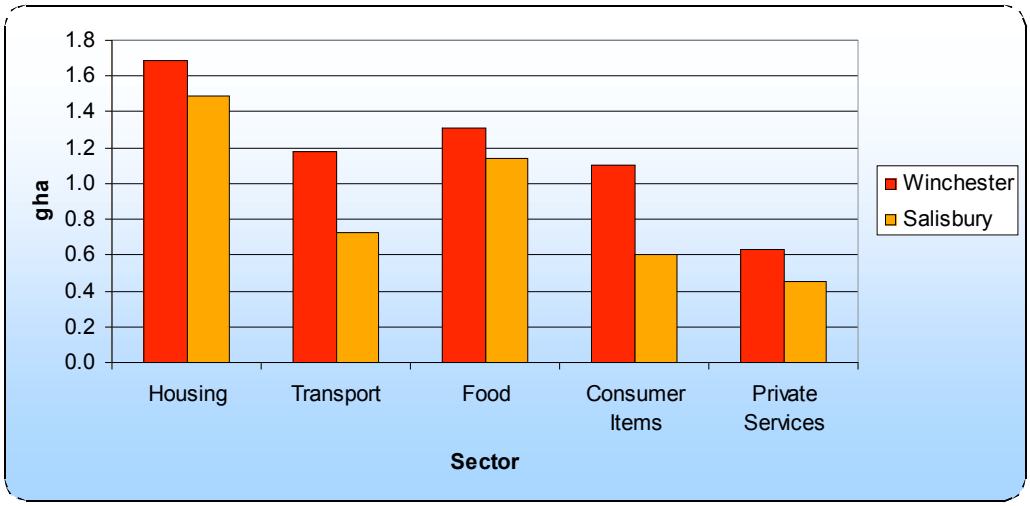
Winchester 3.62 planets

Salisbury 2.79 planets

[18] CfIT, 2006, *Sustainable Transport Choices and the Retail Sector,* www.cfit.gov.uk/docs/2006/stc/technical/pdf/stc-technical01.pdf

[19] www.defra.gov.uk/news/2007/070508a.htm

Ecological Footprint breakdown



Housing

Winchester 1.69 gha

Salisbury 1.49 gha

Transport

Winchester 1.18 gha

Salisbury 0.72 gha

Food

Winchester 1.31 gha

Salisbury 1.14 gha

Consumer items

Winchester 1.11 gha

Salisbury 0.6 gha

Private services

Winchester 0.63 gha

Salisbury 0.46 gha

In each of the footprint sectors, Winchester has a higher footprint than Salisbury. It is much higher for consumer items and transport. The difference is smaller but still noticeable for housing and food.

Salisbury performs well on transport, food and consumer items but performs worse than the average English city on housing and private services.

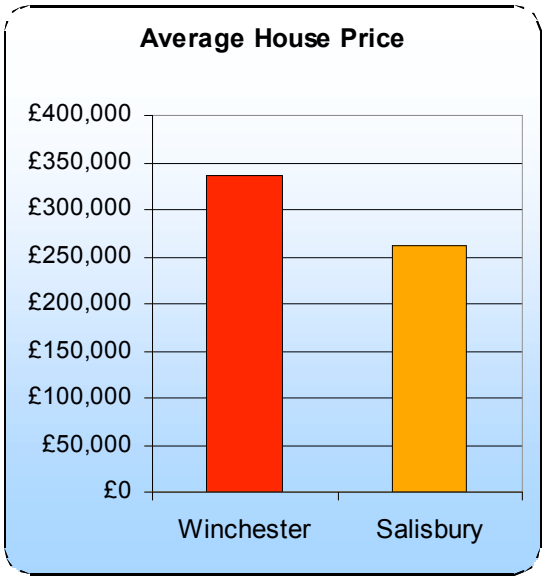
ECONOMIC DATA

Average property prices[20]

Winchester £337,132

Salisbury £260,880

In fact this gives a distorted picture. Salisbury house prices are particularly high for a city with such a low footprint. This is due to the generally high house prices in the south-west.

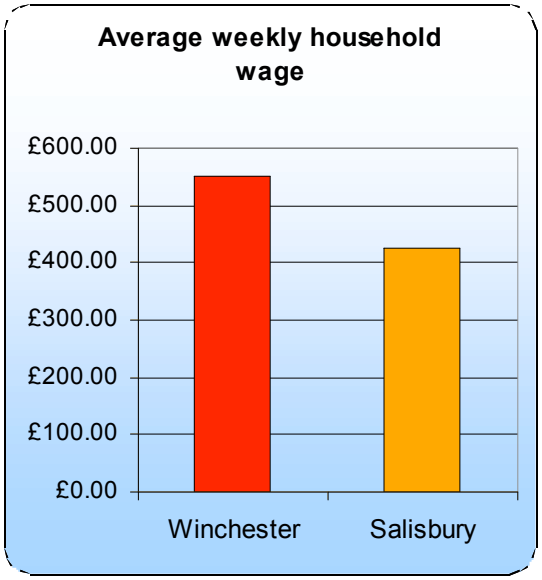


Average weekly household wage[21]

Winchester £550.10

Salisbury £424.10

In both cities, the ratio of annual earnings to house price is around 1:10 or 1:11.



Economic activity rate[22]

Winchester 84%

Salisbury 81%

The labour market is slightly healthier in Winchester, although activity is above the UK average of 78.2% in Salisbury too.

[20] http://news.bbc.co.uk/1/shared/spl/hi/in_depth/uk_house_prices

[21] www.salisbury.gov.uk/economic-indicators-sept06.pdf

[22] www.salisbury.gov.uk/economic-indicators-sept06.pdf

TRANSPORT

Percentage of population commuting to work[23]

Winchester 19%

Salisbury 27%

The proportion of people commuting to work in Salisbury is higher than in Winchester. However, in Salisbury only 20% of these commuters leave the city, whereas in Winchester 40% do[23]. These higher levels of outward commuting are part of what drives Winchester's high transport footprint. The average distance travelled to work is 17% further for Winchester residents than for Salisbury residents, and more people travel by foot, bus or bicycle in Salisbury[24].

On all of the economic indicators, Winchester performs better. It is a more affluent town with lower levels of deprivation. More of the population are employed in well-paid real estate, renting and business activities (18% in Winchester compared with 13% in Salisbury[23]). In Salisbury more of the population work in the lower-paid public sector, including defence (15% compared with 9%[23]).

These figures indicate that the higher footprint in Winchester is the result of people having more money to spend on houses, transport, consumer goods, and services. To reduce this footprint we need to think more about how we spend our money. Are there ways of getting the same benefit without having the same impacts? For example, are there better ways of getting to work?

WHAT ARE THE CITIES DOING?

COGS

The residents of Salisbury are continuing the good work with groups like COGS – the Cycling Opportunities Group Salisbury. This campaigns for improved cycling facilities and organises training for young people to increase the number of people using bicycles. In Salisbury 3.9% of people aged 16-74 travel to work by bicycle, compared with 2.8% on average in England.

MIRACLES

Winchester has been part of the European Commission's Civitas initiative, which looks at sustainable urban transport measures. The MIRACLES programme – part of the Civitas initiative – worked to increase the appeal of travel by bus. It has had some success, leading to an average increase in passengers of 12% on three key routes.

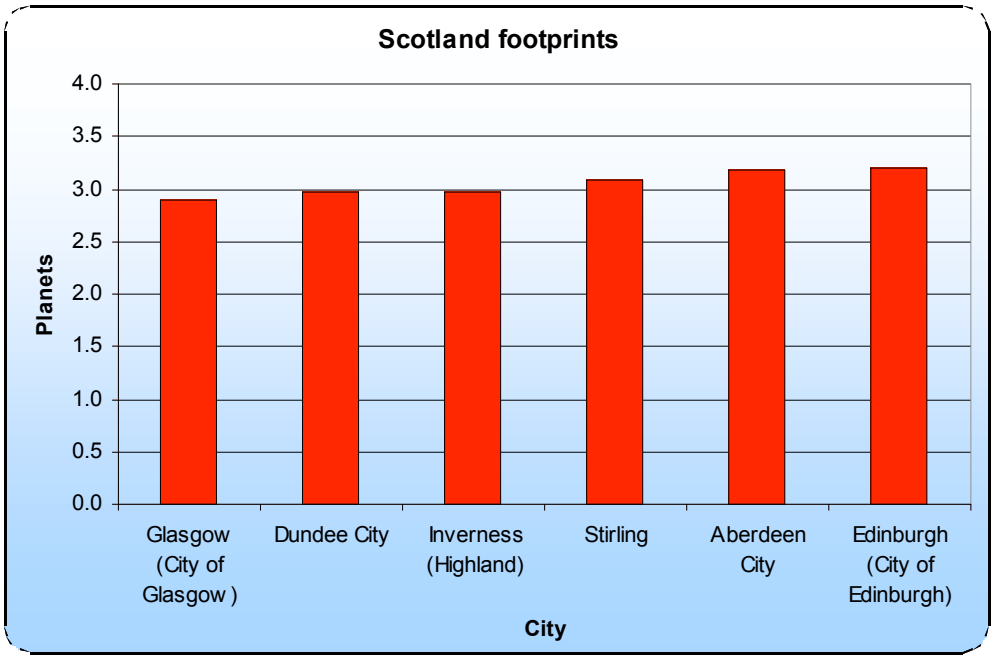
Transport forms a large proportion of Winchester's footprint. Measures like the MIRACLES programme, which set out to improve the environmental standards of the buses and introduced free loan bicycles, make it easier to shop or to get to work without using a car, are a good way of maintaining quality of life while reducing the environmental impact of our lifestyles.

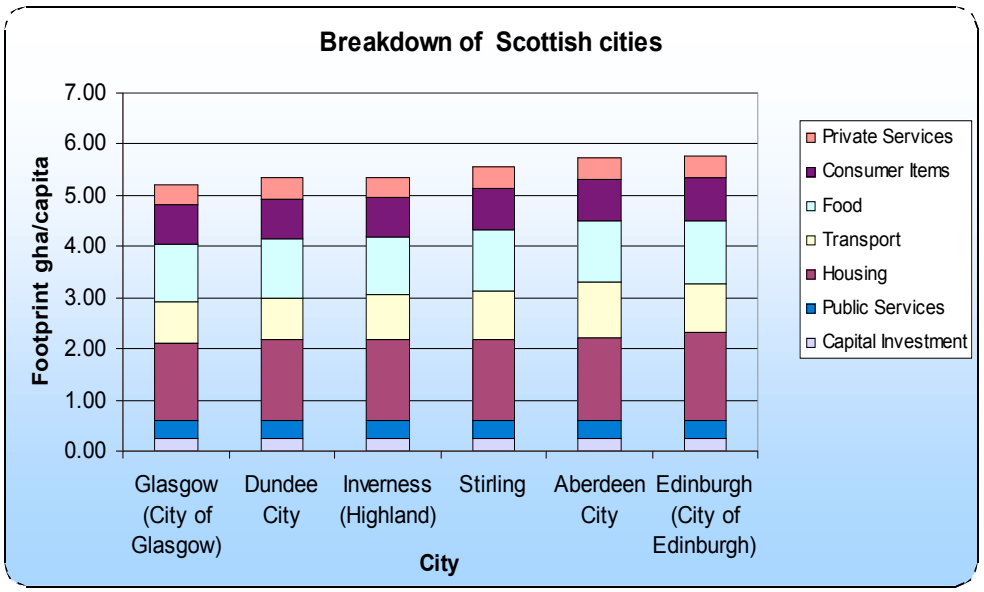
[23] Calculated using data on www.salisbury.gov.uk/economic-indicators-sept06.pdf and the total city population numbers.

[24] www.neighbourhood.statistics.gov.uk

SCOTLAND – SMALLEST TO LARGEST FOOTPRINTS

Glasgow	2.89 planets
Dundee	2.96 planets
Inverness	2.97 planets
Stirling	3.08 planets
Aberdeen	3.18 planets
Edinburgh	3.2 planets



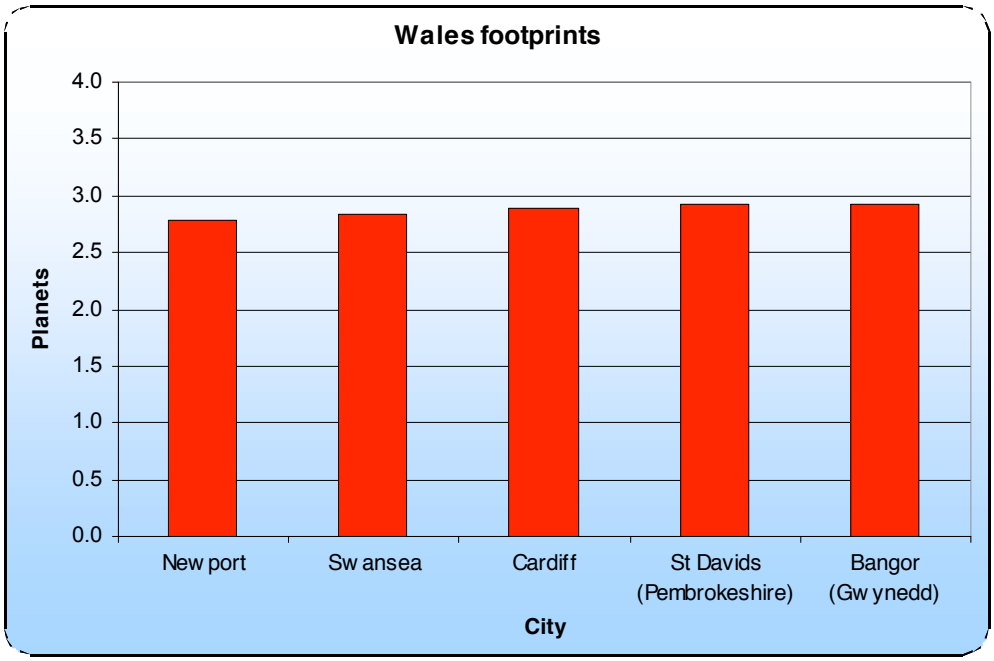


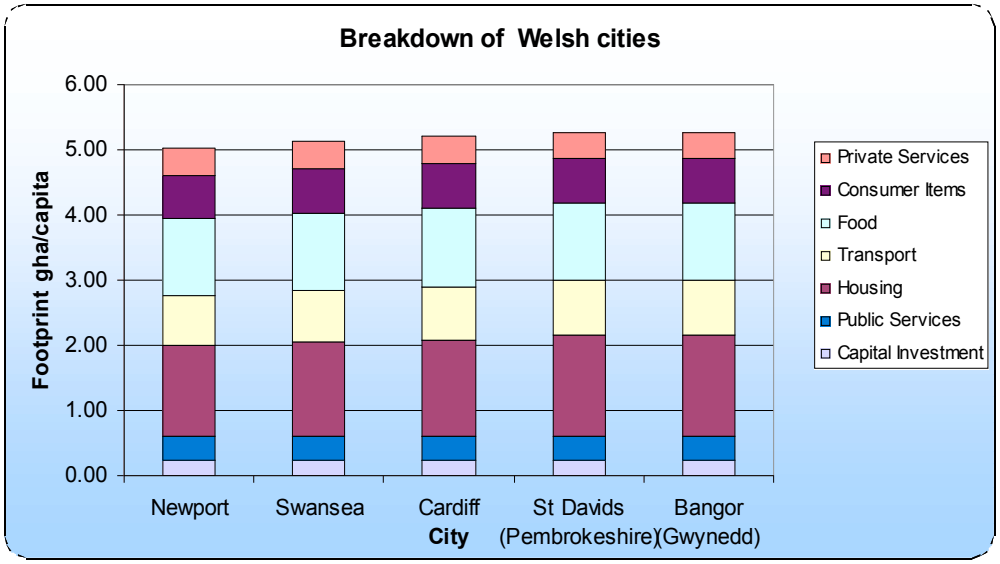
SCOTLAND – 10 FACTS

1. The average footprint of a Scottish city-dweller is 3.05 planets.
2. The citizens of top-ranked Glasgow have, on average, a 10% lower footprint than those of bottom-ranked Edinburgh (2.89 planets and 3.2 planets respectively).
3. Food footprints in Edinburgh are high – 10% higher than in Glasgow – helping to give it the largest footprint per capita in Scotland.
4. Edinburgh has the largest footprint in Scotland in four out of five categories – all but transport.
5. Aberdonians have the biggest average transport footprint in Scotland (1.06 gha) - 25% larger than the average Glaswegian's (0.8 gha)
6. Edinburghers have 10% larger average private services footprints (0.44 gha) than citizens of Inverness (0.4 gha).
7. In Edinburgh the citizens use almost their entire fair share of the Earth on housing (1.73 of 1.8 gha).
8. Glasgow has the smallest footprint of all cities in Scotland in four of the five categories – all except private services.
9. The average Scottish city-dweller's footprint is larger than that of the average English city dweller in all categories apart from food and private services.
10. The total footprint of the capital, Edinburgh, is 2,580,000 gha – 100 times the size of the city.

WALES – SMALLEST TO LARGEST FOOTPRINT

Newport	2.78 planets
Swansea	2.84 planets
Cardiff	2.89 planets
St Davids	2.92 planets
Bangor	2.93 planets





WALES – 10 FACTS

1. The footprint of the average inhabitant of Bangor is 5% larger (2.93 planets) than that of the average inhabitant of Newport (2.78 planets).
2. The smallest footprints within Wales are in the urban south.
3. In Wales, Bangor has the largest average footprint despite only having the largest housing footprint.
4. The people of Newport have the lowest average footprint in Wales in all but one of the five variable categories (private services).
5. Within Wales, St Davids finishes in a different place in each category. It has the largest consumer items footprint but the smallest private services footprint.
6. Bangor's housing footprint is 212 square kilometres. That's more than twice the area of Bangor itself (102 square kilometres).
7. The total footprint of the capital, Cardiff, is 1,580,000 gha. That's more than 100 times the size of Cardiff itself.
8. On average, Welsh city dwellers have lower footprints than their counterparts in England or Scotland.
9. The total footprint in St Davids is just 7,896 gha, or 79 square kilometres. Nevertheless, the inhabitants have one of the highest EF/cap in Wales.
10. If Cardiff's food footprint were measured in allotments (on average an allotment is 250 square metres) the average person would need 49 of them.

EDINBURGH AND CARDIFF – A COMPARISON

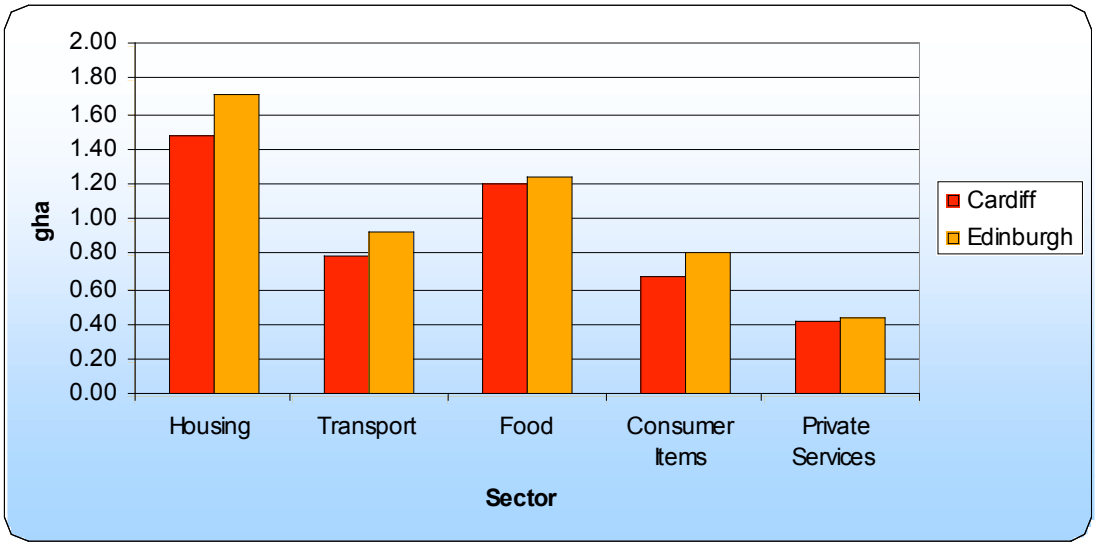
The capital cities of Scotland and Wales are quite different places. This is reflected in their Ecological Footprints. Cardiff is ranked 15th in Britain, while Edinburgh is ranked 50th. This comparison uses economic indicators to examine the differences.

Ecological Footprint

Edinburgh 3.2 planets

Cardiff 2.89 planets

Ecological Footprint breakdown



Housing

Edinburgh 1.73 gha

Cardiff 1.48 gha

Transport

Edinburgh 0.93 gha

Cardiff 0.80gha

Food

Edinburgh 1.24 gha

Cardiff 1.22 gha

Consumer items

Edinburgh 0.82 gha

Cardiff 0.67 gha

Private services

Edinburgh 0.44 gha

Cardiff 0.43 gha

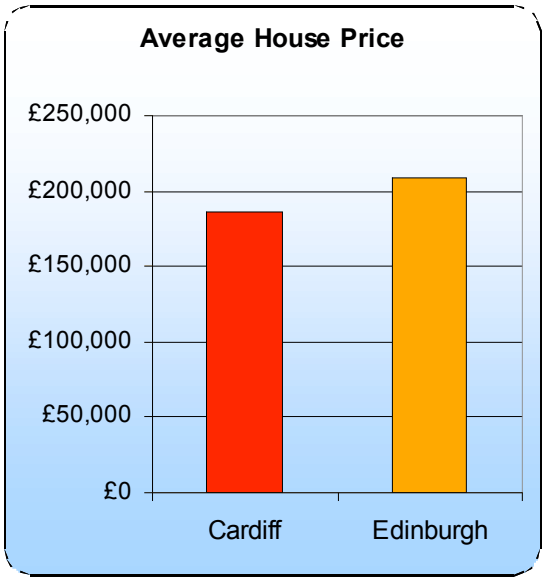
In each of the footprint sectors, Edinburgh has a higher result than Cardiff. It is greatest for housing, consumer items and transport. The difference is smaller but still noticeable for private services and food.

ECONOMIC DATA

Average property prices[25]

Edinburgh £208,490

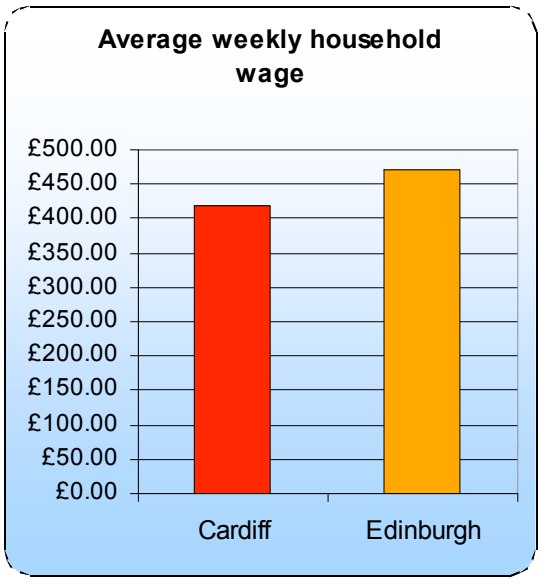
Cardiff £185,859



Average weekly household wage

Edinburgh £469.80[26]

Cardiff £418.60[27]



Economic activity rate

Edinburgh 79.7%[28]

Cardiff 79.4%[29]

This shows that the labour market is slightly healthier in Edinburgh, although activity is also above the UK average of 78.2% in Cardiff.

As with Winchester and Salisbury, the biggest predictor of a large footprint is a higher income. Becoming aware of the way we spend our money – becoming conscious, discerning consumers – is the first step towards reducing our footprints.

[25] news.bbc.co.uk/1/shared/spl/hi/in_depth/uk_house_prices

[26] www.scotland.gov.uk/Topics/Statistics/Browse/Labour-Market/DataE1

[27] www.sirgaerfyrddin.gov.uk/attached_files/Melita/2007%20data/Economic%20Activity%202007.doc

[28] www.scotland.gov.uk/Publications/2006/06/27171110/3

[29] www.sirgaerfyrddin.gov.uk/attached_files/Melita/2007%20data/Economic%20Activity%202007.doc

HOUSING

Average Standard Assessment Procedure (SAP) score

Edinburgh 46[30]

Cardiff 52[31]

Home energy efficiency is a large proportion of all of our footprints – the impacts of heating our homes accounts for around 60% of our domestic carbon emissions. Homes in Edinburgh have a lower (poorer) score on the Standard Assessment Procedure (SAP), a measure of the energy efficiency of housing. Both cities perform better than the UK average of around SAP 44, but the scores are a long way below what it is possible to achieve with simple refurbishment techniques.

HOW ARE CARDIFF AND EDINBURGH ADDRESSING THEIR FOOTPRINTS?

The housing sector is the largest sector in most of our footprints. This area, more than any other, is where we can make a big reduction in our Ecological Footprint.

The technologies to insulate our homes are available and they are cost-effective. Insulating cavity walls is a quick and non-disruptive process and, on average, saves £90 a year. If all the homes with unfilled cavity walls had them filled, the energy saved could heat another 1.4 million homes.

If you have no loft insulation, adding 270mm can save you £110 and avoid the emission of a tonne of CO_2 a year.

The City of Edinburgh has recently joined the Local Footprints Project, a joint initiative of WWF and the Sustainable Scotland Network, to see what it can do to reduce its housing footprint – as well as looking at its transport and food footprint (www.scotlandsfootprint.org).

Edinburgh faces particular challenges to raise the standard of existing housing stock, as much of it is old (pre-1920) and has minimal or no insulation. For example, 45% of houses in Edinburgh are stone-built tenements, the majority of which have no insulation.

Edinburgh has initiatives in place to help private homeowners and landlords improve the energy efficiency of existing houses. This includes advice, grant schemes, and surveys (www.changeworks.org.uk).

In both Cardiff and Edinburgh there is support for grant schemes for those on certain benefits, such as the Home Energy Efficiency Scheme in Wales (www.heeswales.co.uk) and Warm Deal in Scotland (www.homeadvisoryservice.co.uk/warm-deal-scotland.html).

There are plenty of services in both cities, and across the rest of Britain, which can help to reduce the Ecological Footprint of our homes. The Energy Saving Trust (www.energysavingtrust.org.uk) and the Association of Environmentally Conscious Builders (www.aecb.net) are good places to start.

[30] download.edinburgh.gov.uk/housingdev/AreaProfileSouthEast.doc

[31] www.cardiff.gov.uk/ObjView.asp?Object_ID=8632

Recommendations

This report has shown how everything we consume adds to our footprint. We currently consume too much and use resources inefficiently. In the UK we need to transform our lifestyles – from living as though we have three planets, to a future where we live within the means of one planet.

Our levels of over-consumption mean that we currently use two more planets' worth of resources than we can sustain. One of these 'extra' planets may be regarded as impacts that we as consumers can do something about; the second is one that the government and business must address.

The first step is for us as individuals to become active citizens and conscious consumers. We can start to do something about our footprint by looking at what our city can do to help us. But to really target our reductions we need to find out what our own footprint is.

We can see that the key indicator of a large footprint is affluence. Many regard increasing income as the biggest sign of success; however there are other ways of measuring progress. The case studies in this report show ways that we can reduce our footprint without compromising our quality of life. Some of them, for example cycling instead of using our cars, even make a positive improvement.

Some other countries, such as Germany have higher income per capita than here in Britain and have a lower footprint. We could learn from their experiences and try to decouple our income from our environmental impacts. There are ways of doing this such as generating our energy from renewable sources. Germany has the fastest rate of photovoltaic solar power installation in Europe. This sort of measure can be hard to put into practice as an individual. But by joining together with others in our cities we can ask the government to follow examples of responsible environmental practice that other governments around the world have implemented.

By following the examples in some of the case studies and the recommendations below, we can become green champions for our city and lead the rest of our community into action on reducing their own environmental footprint.

Groups like Carbon Rationing Action Groups (CRAGs) and Transition Towns offer a good way of sharing these ways of reducing our impact.

TOP 10 RECOMMENDATIONS TO REDUCE YOUR FOOTPRINT

1. Measure your footprint and set annual targets to reduce it

It is much easier to reduce your footprint if you know what you are consuming and its environmental impact. WWF's calculator (wwf.org.uk/calculator) measures how your ecological footprint is made up and suggests the best ways of reducing it.

2. Make your home as energy efficient as possible

This tip is one of the simplest to follow. Many measures can 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 of energy costs each year. Another way is to improve your home's insulation, which can be quick and easy and will normally repay the cost in energy savings within a few years. Some local authority areas are well served by energy-efficiency grants. Contact your local authority for more information.

3. Campaign for a low carbon future

Write to your MP and ask what they are doing to hasten the move towards low and zero carbon forms of power generation. The Climate Change Bill currently going through UK Parliament is calling for a 60% reduction in carbon emissions by 2050. While this is the first piece of legislation globally that aims to curb carbon dioxide emissions, it is based on old science and does not go as far as scientific evidence says we need to go. An 80% reduction is now needed.

4. Holiday closer to home

Flights cause a large and growing part of our collective footprint. One passenger's share of a return flight to Australia has the same impact on the climate as it takes to heat and power the average home for six years. Europe is now easier to reach by train than it has ever been. A passenger on a flight to Paris is responsible for 10 times more CO_2 emissions than a person using the Eurostar; and the journey takes around 45 minutes longer once checking in and travel to the city centre are taken into account.

5. Think before you spend

Most of our footprint is down to the things we buy. Our houses are often cluttered with items we only use or wear once. The average drill is used for just 15 minutes in its lifetime. Rather than buying something, consider whether you could hire or borrow one instead.

6. Reduce your car use

In areas where good public transport links exist, use them. If they don't exist, lift sharing, car pools, walking or cycling are good ways of reducing your transport 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%.

7. Eat a local, organic, seasonal, low meat diet

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. Some supermarkets now indicate if their produce has been flown to the UK. A bonus is that the freshest food – unprocessed, locally grown and in season – is also food with a low footprint.

8. Join others who are reducing their footprint (and encourage those who are not)

There is evidence showing that people who try to reduce their footprint have more success if they are part of a group. So join a local group trying to do this, for example a Global Action Plan eco-

teams, or a Carbon Rationing Action Group (CRAG), who commit to reduce their carbon footprints each year (www.carbonrationing.org.uk). Better still, start your own group! 'Transition Towns' are springing up all over the UK. They aim to reduce their resource use in preparation for the inevitable day when oil starts to run out. If your city or town is one, find out what they have to offer. If not, find out how it could become one.

9. Make waste obsolete

The average household throws away over one tonne of materials every year. 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). For food, plan your menu for the week – this helps to cut excessive purchases – and compost any leftovers.

10. Be counted! Get on the electoral roll and vote for the environment

The environment and carbon dioxide emissions are a central political issue. When talking to your MP, quiz them on environmental issues that matter to you – such as climate change, waste or transport. Make sure your vote counts – ensure you are on the electoral register, and when there is an election find out where each party stands on the issues.

Conclusions

Our over-consumption of the Earth's resources is not sustainable.

Some of the findings of this report have highlighted the link between income and environmental impact. Globally, this link is not an automatic one, so in the UK we need to find ways of disconnecting it. For example, Germany has a higher GDP per capita but a lower Ecological Footprint than the UK. Other countries such as the US have much higher footprints. These examples should be examined and lessons learned on best practice.

As with countries, some well-off cities have a footprint that is smaller than might be expected. Salisbury, for example, has relatively high wages and house prices but has one of the smallest footprints in Britain.

There are many ways for responsible, active and engaged citizens to minimise their environmental impact as outlined in the case studies and recommendations in this report.

Individuals can measure their Ecological Footprint. Understanding what drives our personal footprint is the first step in making positive decisions to tackle it. Rethinking the way we travel, work, eat and spend, and the way we power our homes, will help to protect the planet, improve the bank balance and probably make us healthier too. Individuals play a key role in putting pressure on government and business to change practice. By buying from companies whose policies aim to avoid damaging the planet, as well as lobbying and voting for politicians who place the environment high on their agenda, we can drive change across the UK.

But it is not just down to us as individuals. A multi-faceted approach is required from all parts of the UK. Business and government must take responsibility for the impacts they have on the environment. The government can reward the best performers through legislation. It can also make it mandatory for large businesses to measure and manage their environmental impact and to better communicate the impact embodied in the goods and services they provide to the public. This will allow the public to make more informed choices, allowing consumers to vote with their feet, and their money. And, by planning more affordable and consistent public transport networks, especially in densely populated areas, government, councils and planners can facilitate lower impact travel infrastructures, and provide incentives for their use.

Businesses can seize the opportunity to reduce environmental impact and use it to differentiate their goods and services in the market. As well as reducing impacts, money can be saved by increasing the efficiency of buildings, rethinking packaging and product materials, and rewarding better environmental practices among staff.

Only by taking careful stock of the many ways we leave our footprint on the Earth, as individuals, as workers and as citizens, and by taking action to reduce them, can we ensure that the planet remains a beautiful, rich and sustainable home for ourselves and for future generations.

Appendix – Breakdown of city residents ecological footprint

Rank	City	Planets	Footprint per Capita (gha)	Housing (gha)	Transport (gha)	Food (gha)	Consumer Items (gha)	Private Services (gha)	Public Services Filter (gha)	Capital Investment (gha)	Other Filter Footprint Capita (gha)
1	Newport	2.78	5.01	1.40	0.76	1.18	0.66	0.42	0.37	0.24	-0.01
1	Plymouth	2.78	5.01	1.40	0.73	1.12	0.67	0.48	0.37	0.24	-0.01
3	Salisbury	2.79	5.01	1.49	0.72	1.14	0.60	0.46	0.37	0.24	-0.01
3	Kingston upon Hull	2.79	5.02	1.37	0.75	1.21	0.65	0.44	0.37	0.24	-0.01
3	Stoke on Trent	2.79	5.03	1.41	0.77	1.21	0.61	0.43	0.37	0.24	-0.01
6	Gloucester	2.81	5.06	1.38	0.78	1.14	0.68	0.47	0.37	0.24	-0.01
6	Wakefield	2.81	5.06	1.39	0.78	1.22	0.64	0.43	0.37	0.24	-0.01
8	Sunderland	2.83	5.09	1.39	0.78	1.34	0.58	0.40	0.37	0.24	-0.01
9	Truro (Carrick)	2.84	5.11	1.34	0.83	1.31	0.62	0.41	0.37	0.24	-0.01
9	Wolverhampton	2.84	5.11	1.46	0.79	1.21	0.61	0.44	0.37	0.24	-0.01
9	Salford	2.84	5.12	1.54	0.70	1.15	0.68	0.44	0.37	0.24	-0.01
9	Swansea	2.84	5.12	1.44	0.79	1.20	0.67	0.42	0.37	0.24	-0.01
13	Coventry	2.85	5.14	1.43	0.81	1.23	0.63	0.44	0.37	0.24	-0.01
14	Exeter	2.88	5.18	1.47	0.77	1.16	0.69	0.49	0.37	0.24	-0.01
15	Cardiff	2.89	5.20	1.48	0.80	1.22	0.67	0.43	0.37	0.24	-0.01
15	Glasgow	2.89	5.21	1.51	0.80	1.14	0.75	0.41	0.37	0.24	-0.01
17	Bradford	2.90	5.21	1.43	0.88	1.23	0.64	0.44	0.37	0.24	-0.01
1	Lincoln	2.90	5.22	1.46	0.84	1.14	0.71	0.48	0.37	0.24	-0.01
17	Birmingham	2.90	5.22	1.52	0.83	1.22	0.61	0.45	0.37	0.24	-0.01
17	Bristol	2.90	5.22	1.50	0.77	1.16	0.69	0.50	0.37	0.24	-0.01
21	Liverpool	2.92	5.25	1.48	0.79	1.19	0.74	0.45	0.37	0.24	-0.01
21	Nottingham	2.92	5.26	1.53	0.80	1.13	0.69	0.49	0.37	0.24	-0.01
21	St Davids (Pembrokeshire)	2.92	5.26	1.55	0.83	1.19	0.68	0.41	0.37	0.24	-0.01
24	Bangor (Gwynedd)	2.93	5.27	1.56	0.82	1.20	0.67	0.41	0.37	0.24	-0.01
24	Worcester	2.93	5.27	1.43	0.86	1.28	0.65	0.45	0.37	0.24	-0.01
24	Leicester	2.93	5.27	1.60	0.85	1.10	0.66	0.48	0.37	0.24	-0.01
24	Carlisle	2.93	5.28	1.46	0.83	1.18	0.76	0.44	0.37	0.24	-0.01
28	Derby	2.94	5.29	1.48	0.88	1.14	0.70	0.48	0.37	0.24	-0.01
29	Sheffield	2.95	5.31	1.49	0.83	1.27	0.67	0.45	0.37	0.24	-0.01
29	York	2.95	5.31	1.44	0.86	1.29	0.68	0.45	0.37	0.24	-0.01
31	Leeds	2.96	5.33	1.49	0.84	1.27	0.67	0.45	0.37	0.24	-0.01
31	Dundee City	2.96	5.33	1.56	0.84	1.15	0.77	0.41	0.37	0.24	-0.01
33	Peterborough	2.97	5.34	1.31	0.97	1.22	0.71	0.53	0.37	0.24	-0.01
33	Norwich	2.97	5.34	1.38	0.90	1.22	0.70	0.54	0.37	0.24	-0.01
33	Preston	2.97	5.35	1.48	0.89	1.21	0.73	0.44	0.37	0.24	-0.01
33	Inverness (Highland)	2.97	5.35	1.56	0.88	1.15	0.75	0.40	0.37	0.24	-0.01
37	Manchester	2.98	5.36	1.61	0.79	1.20	0.71	0.46	0.37	0.24	-0.01
37	Ripon (Harrogate)	2.98	5.37	1.41	0.92	1.30	0.70	0.44	0.37	0.24	-0.01
39	Bath (Bath and NE Somerset)	3.00	5.40	1.53	0.84	1.21	0.72	0.51	0.37	0.24	-0.01
39	Wells (Bath and NE Somerset)	3.00	5.40	1.53	0.84	1.21	0.72	0.51	0.37	0.24	-0.01
41	Newcastle upon Tyne	3.01	5.43	1.51	0.86	1.43	0.60	0.42	0.37	0.24	-0.01
42	Lancaster	3.03	5.45	1.55	0.86	1.24	0.75	0.45	0.37	0.24	-0.01
43	Lichfield	3.04	5.48	1.46	0.94	1.34	0.68	0.46	0.37	0.24	-0.01
44	London	3.05	5.48	1.52	0.72	1.30	0.77	0.57	0.37	0.24	-0.01
45	Stirling	3.08	5.54	1.58	0.95	1.20	0.79	0.42	0.37	0.24	-0.01
45	Hereford (County of Herefordshire)	3.08	5.54	1.60	0.93	1.32	0.65	0.43	0.37	0.24	-0.01
47	Ely (East Cambs)	3.12	5.61	1.27	1.10	1.32	0.80	0.52	0.37	0.24	-0.01
48	Aberdeen	3.18	5.73	1.62	1.06	1.21	0.81	0.43	0.37	0.24	-0.01
49	Chester	3.19	5.74	1.65	0.94	1.30	0.78	0.46	0.37	0.24	-0.01
50	Edinburgh	3.20	5.76	1.73	0.93	1.24	0.82	0.44	0.37	0.24	-0.01
51	Portsmouth	3.21	5.79	1.56	0.93	1.16	0.96	0.56	0.37	0.24	-0.01
52	Cambridge	3.22	5.79	1.51	1.03	1.32	0.75	0.58	0.37	0.24	-0.01
53	Durham	3.24	5.83	1.65	0.99	1.52	0.63	0.43	0.37	0.24	-0.01
54	Southampton	3.27	5.88	1.58	0.96	1.19	0.97	0.57	0.37	0.24	-0.01
55	Oxford	3.40	6.12	1.70	0.99	1.22	0.99	0.61	0.37	0.24	-0.01
55	Canterbury	3.40	6.12	1.64	1.06	1.23	1.01	0.58	0.37	0.24	-0.01
57	Brighton and Hove	3.47	6.25	1.69	1.05	1.25	1.04	0.62	0.37	0.24	-0.01
58	Chichester	3.49	6.28	1.77	1.08	1.21	1.05	0.57	0.37	0.24	-0.01
59	St. Albans	3.51	6.31	1.45	1.60	1.34	0.76	0.57	0.37	0.24	-0.01
60	Winchester	3.62	6.52	1.69	1.18	1.31	1.11	0.63	0.37	0.24	-0.01

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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