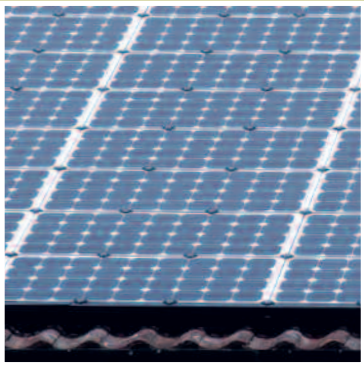
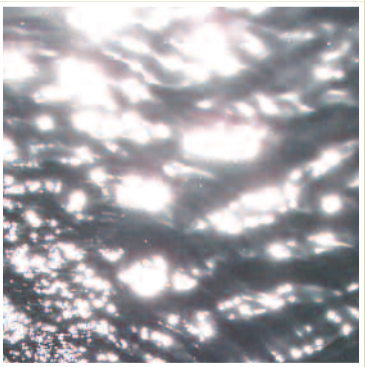
The environment in your pocket **2006**





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The environment in your pocket **2006**

Key facts and figures on the environment of the United Kingdom

Introduction

Welcome to the tenth edition of our annual booklet of key environmental statistics.

The Environment in your Pocket is intended to be an easily accessible, handily sized, reference booklet, which offers information on a wide range of environmental topics and will be useful for anyone with an interest in environmental issues. It covers almost 60 key data series and focuses on providing trends over time, including performance against quantified targets and commitments set at the national and international level.

The contents of this edition are similar to previous editions. However, as with each previous edition, we have introduced some new items. In particular this year, as this is the 10th published edition, we have included a section looking back at the environment as presented in the first edition in 1996 and changes since then. Also, as part of this ten-year review, on a number of other pages in the booklet we have included data for or made comparisons with 1996 or the mid-1990s (depending on the available data).

Explanatory notes at the back of the booklet provide more detailed technical or background information for those items where it is felt to be particularly necessary.

The booklet also draws upon the set of indicators supporting the UK Government's Sustainable Development Strategy. The latest, updated complete set of these indicators has been published in a pocket-sized booklet: *Sustainable Development Indicators in your Pocket 2006*.[1]

The Environment in your Pocket 2006 is available free of charge from Defra Publications (from the address on the inside front cover). It is available in the traditional pocket-sized (A6) format and also a larger (A4) size version. The larger version contains the same information but with larger print. This booklet, similar "key facts" about the environment and more detailed statistics are available on *the e-Digest of Environmental Statistics* website (see below). This booklet is widely distributed to public libraries, schools, colleges of further education, and local and central government bodies. If you or your organisation would like to receive a copy of the next edition please contact us at the address below.

Our aim is to produce user-friendly, useful and relevant presentations, building on the feedback we have received from readers of previous editions. This year we are consulting readers through a short survey/ questionnaire included with copies of the booklet that are sent out. It would be helpful to us if you would complete the questionnaire and tell us what you think about *The Environment in your Pocket* and how you use it. If you want to send us any comments, including ideas for future editions, they would be most welcome.

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e-Digest of Environmental Statistics:
www.defra.gov.uk/environment/statistics/index.htm

Indicators of Sustainable Development:
www.sustainable-development.gov.uk/progress/index.htm

1 *Sustainable Development Indicators in your Pocket 2006 (available from Defra Publications – product code PB12045)*

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* *items marked with an asterisk are indicators supporting the UK Government Sustainable Development Strategy*

10 years of the environment in your pocket

The Environment in your Pocket (EIYP) was born out of the success of a pilot booklet of key facts on the environment produced in 1995 in limited numbers as a portable, ready-to-hand source for ministers and officials to supplement the more detailed statistics and commentary of the *Digest of Environmental Statistics*. The first edition of *EIYP* to be published for a wider audience, including students, teachers, libraries, non-governmental organisations, local authorities, the general public – in fact, anyone with an interest in the environment – appeared in 1996 and has proved popular in each edition since.

At 60 pages and presenting almost 55 items, *EIYP 1996*, was slightly thinner than this 2006 edition, but was recognisably similar and around half of the items in *EIYP 1996* are present, updated, in *EIYP 2006*. The ten editions from *EIYP 1996* to the current one have charted the rise and fall not only of the measure of the state of and pressures on the environment but also of the prominence of environmental issues and concerns.

For example, the **depletion of the ozone layer** by emissions of man-made substances such as chlorofluorocarbons (CFCs) became a particular concern in the 1980s and led to an international agreement – the Montreal Protocol – to cut their production. *EIYP 1996* illustrated the trend in consumption of CFCs in Europe and showed that it had fallen by 85 per cent between 1986 and 1994. Figures have not been published in recent editions because production and consumption have been at low levels – global production had been cut by 93 per cent between 1986 and 2004 (see page 10 of *EIYP 2006*).

Similarly **lead in petrol** was an environmental concern of the 1980s. Controls on the lead content of petrol were introduced, followed by the introduction of unleaded petrol in the UK in mid 1980s. A graph in *EIYP 1996* showed that unleaded petrol accounted for 65 per cent of petrol sales by end of 1995 and emissions of lead had fallen by 85 per cent since 1980. The updated graph shows that, by 2000, lead emissions from vehicles had fallen to virtually nil (page 11).

Estimates of the lengths of **hedgerows** from various Countryside Surveys presented in *EIYP 1996* showed that the stock in England and Wales had declined by a third between 1984 and 1993. Results from the latest Survey (CS2000) suggest that the length of hedgerows in 1998, was much the same as in 1990 (page 12).

Further details: www.defra.gov.uk/environment/statistics/index.htm

10 years of the environment in your pocket

A major issue of concern in the 1990s that is **the** major concern today is **climate change** and man's role in contributing to it through the emission of greenhouse gases. In our 1996 edition, 1995 was noted as globally the hottest on record. The current edition shows that eight out of the ten years since then have been as hot or hotter and that 1998 has been the hottest year recorded (page 24). Under the Kyoto Protocol many countries agreed to reduce emissions of the greenhouse gases. In 1996 UK emissions of the basket of greenhouse gases were 6 per cent below the baseline level, in 2004 they were 15 per cent lower than that baseline and emissions of CO_2 were 3½ per cent lower in 1996 and 5 per cent lower in 2004 (page 28).

There have been general improvements in **air quality**, particularly in urban areas, over recent years. The average number of days with moderate or higher air pollution has generally decreased significantly in urban areas since 1996. In rural areas where ozone is the main cause of pollution there has been no overall trend (pages 33 and 34). Emissions of other pollutants, such as SO_2 and NO_x have also fallen since 1996 (pages 36 and 37).

What about **water quality**? In England 71 per cent of river length was of good biological quality in 2005 compared with 66 per cent in 1995. In Wales 80 per cent was of good biological quality in 2005 compared with 87 per cent in 1995 and 79 per cent in 1990. In all years since 1993 over 90 per cent of rivers in Wales have been of good chemical quality (pages 38 and 39).

For coastal waters, *EIYP 1996* noted that just over three-quarters of **bathing waters** of the UK had reached mandatory standards of the European Bathing Water Directive in 1991 and that by 1995 the figure was almost 9 in 10 waters. In 2005 98 per cent of coastal bathing water in the UK had reached this standard (pages 46 and 47).

Further out to sea, the state of **fish stocks** in the North Sea has been more varied. Apart from mackerel, stocks were generally lower in 1996 than in 1964. Since 1996 herring has shown the most improvement – four times the stock of 1996 – whilst North Sea cod stocks, by contrast, more than halved between 1996 and 2004 (page 48).

Populations of birds are used as a good measure of the health of the countryside and wildlife. The overall index of populations of British breeding birds has been relatively stable over the last two decades. Since the mid-1970s, farmland and woodland bird populations have seen significant

Further details: www.defra.gov.uk/environment/statistics/index.htm

10 years of the environment in your pocket

decreases of nearly 50 and 20 per cent respectively but appear to have stabilised, with little change since 1996 (page 64).

In 1995/6 the first of a series of annual surveys of municipal **waste** was undertaken. Between 1995/6 and 2004/5 in the UK, household waste per person increased by 15 per cent. *EIYP 1996* recorded the rise in the number of sites in the bottle bank scheme between 1982 and 1994. Many more **recycling** schemes have been put in place since and the proportion of household waste recycled or composted in the UK has increased from 6 per cent in 1995/6 to 22½ per cent in 2004/5 (pages 53 and 54).

Many of the **pressures on the environment** in 1996 remain. In the 1996 edition of *EIYP* the projection for the UK population was for 61¼ million people by 2011 and 62 million by 2021. The latest projections now estimate a population of around 61.9 million by 2011 and 64¾ million by 2021 (page 13). Between 1996 and 2004 distances driven by private cars in Britain increased by 17 per cent (page 19). The use of fuel for electricity grew by 4 per cent between 1990 and 1996 and by 2005 it had grown 14 per cent since 1990 (pages 14 and 15).

Actions to mitigate those pressures and protect the environment have been seen during the period. The following are just some examples. In 1996 The Environment Agency of England and Wales was created. In 1997 the Kyoto Protocol setting limits for emissions of greenhouse gases by countries was first adopted. In1999 the Montreal Protocol was strengthened by the Beijing Amendment (the year before the largest hole in the ozone layer over Antarctica ever was observed). The UK published its Air Quality Strategy in 2000 (revised in 2003). A new Sustainable Development Strategy for the UK was launched in 2005 supported by a set indicators.

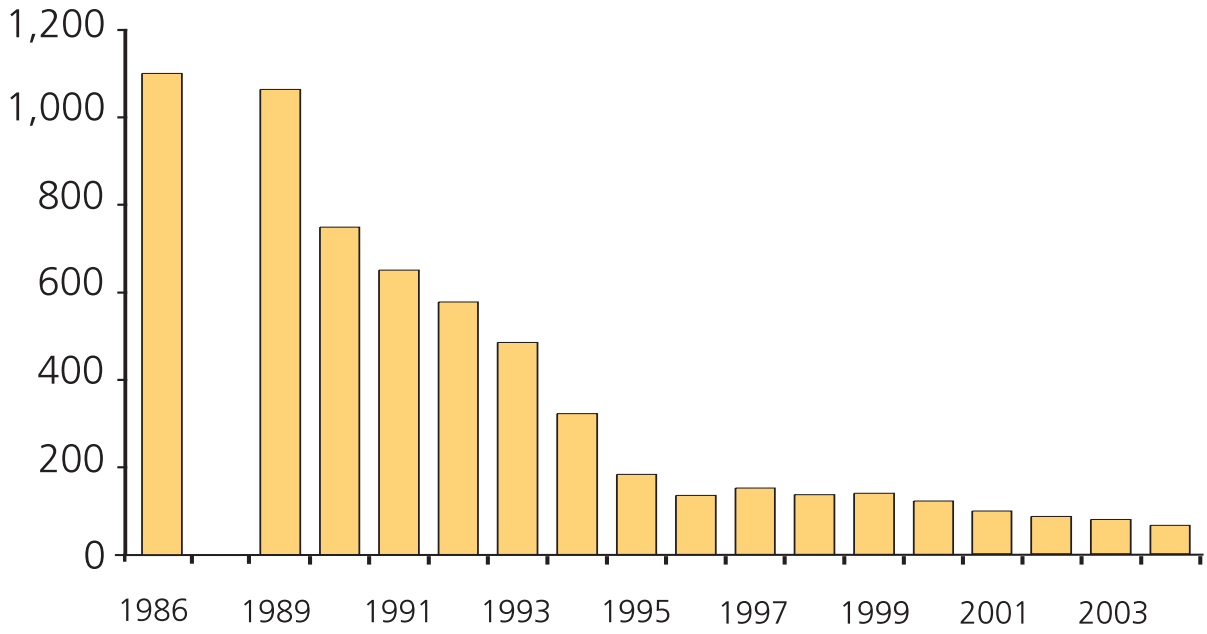
The policy agenda has changed considerably over the last decade with issues being tackled more holistically and there is now a clearer understanding that every one of us has a responsibility to move towards *One Planet Living* – living within the environmental means of our planet, by reducing our consumption of resources, energy use and the waste we produce.

Whilst we can celebrate ten years of an *Environment in your Pocket*, we must now look to the future and we hope that this booklet will continue to evolve, to inform and to help in the debates to come.

Further details: www.defra.gov.uk/environment/statistics/index.htm

Global Production of CFCs: 1986–2004

World



	Thousand (ODP) tonnes		
	1986	1996	2004
Production of CFCs	1,072	152	70

Depletion of the stratospheric ozone layer has been caused by man-made emissions of substances containing chlorine and bromine, including chlorofluorocarbons (CFCs). In 1987 international agreement was reached, in the Montreal Protocol, to limit the production and consumption of the most important of these substances, leading to substantial reductions in their production and consumption.

Global production of CFCs fell by around 93 per cent between 1986 and 2004.

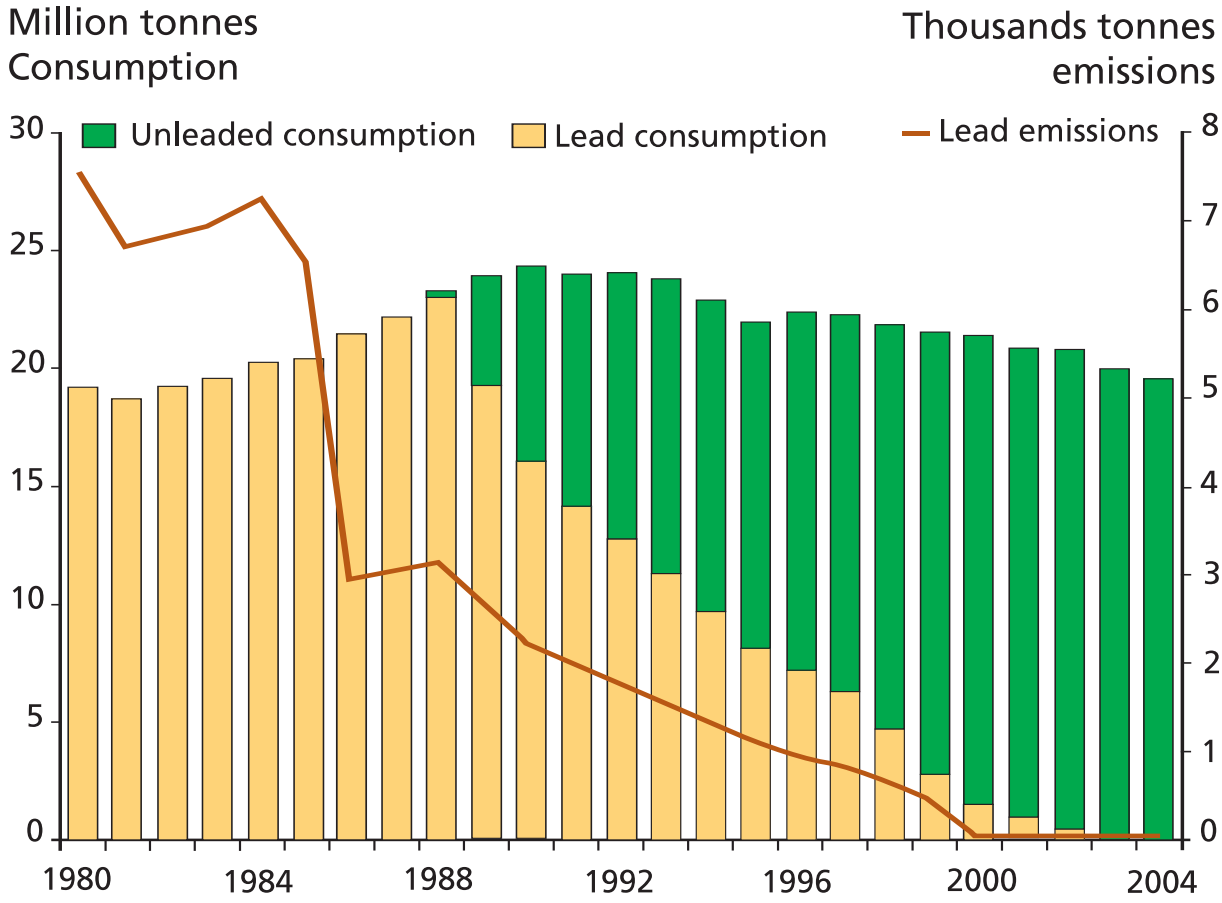
Note: ODP = Ozone depletion potential

Source: UNEP

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Consumption of petrol and lead emissions from the use of petrol: 1980–2004

United Kingdom



Thousand tonnes

	1980	1985	1990	1996	2000
Lead emissions from petrol-engined vehicles	7.5	6.5	2.2	0.9	0.0

Emissions of lead from road vehicles fell from 7 ½ thousand tonnes in 1980 to virtually zero in 2000, initially as a result of controls on the lead content of fuels and subsequently through the introduction of unleaded petrol.

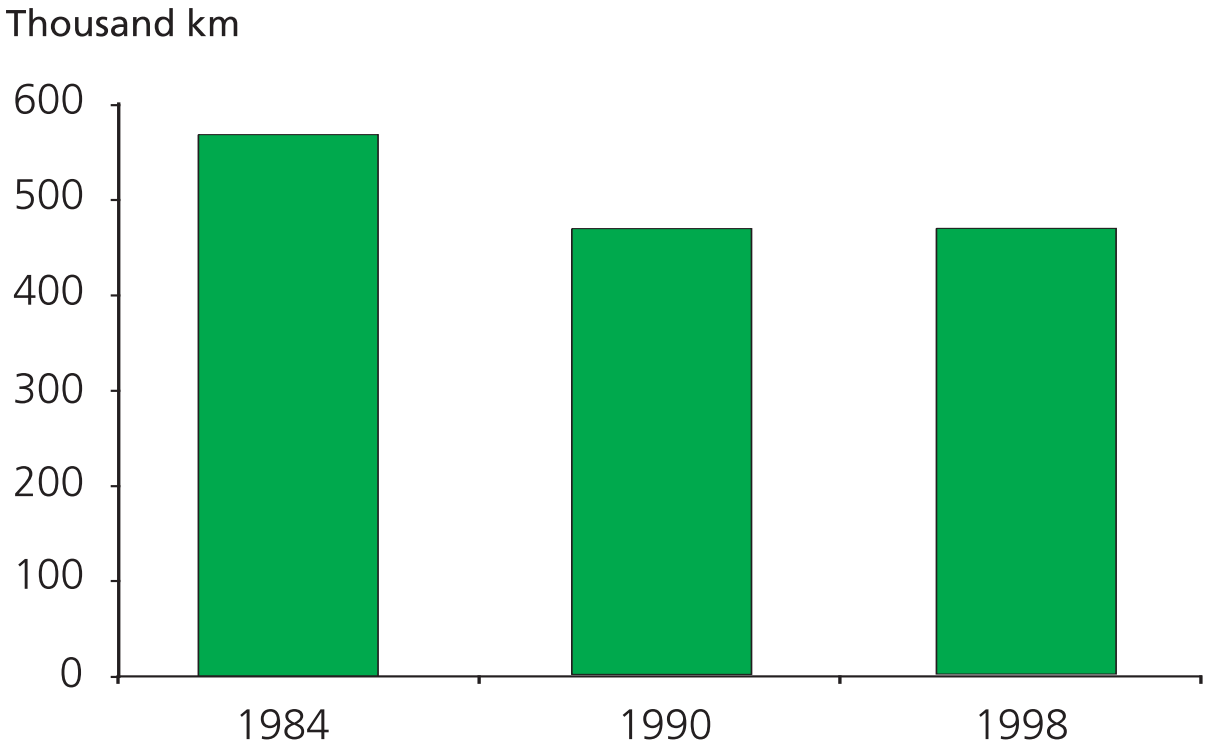
The uptake of unleaded petrol increased from virtually zero in 1987 to two-thirds of UK petrol consumed in 1996 and to 92 per cent of petrol consumed by the end of 1999. Since January 2000 only unleaded petrol has been sold from petrol station forecourts.

Source: DTI, netcen

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Hedgerow length: 1984–1998

Great Britain



	Thousand kilometres		
	1984	1990	1998
Hedgerow length	562	468	468

Between 1984 and 1998, according to the Countryside Survey, the total stock of managed hedges in Great Britain decreased by 88,000 km (16 per cent).

The rate of decline of hedgerow growth was 15,000 km per year between 1984 and 1990. Between 1990 and 1998 the length of hedgerows was virtually unchanged.

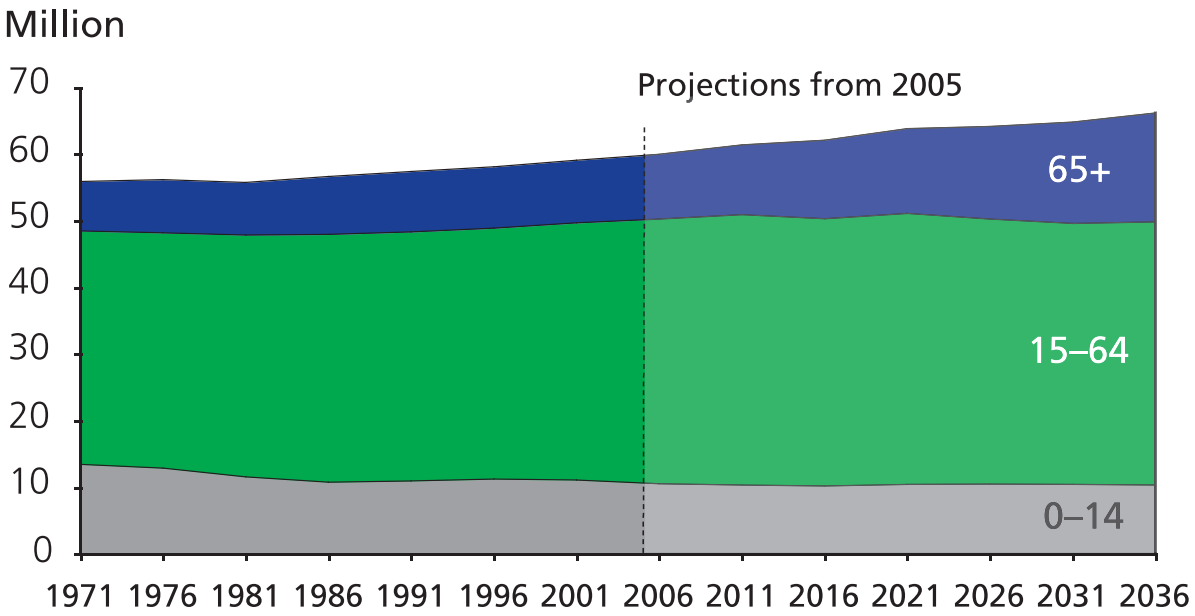
The Countryside Survey is a major audit of the British countryside. It involves both detailed field observations and satellite imagery which has provided a complete land cover census for Great Britain and Northern Ireland.

Source: Defra, CEH

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

Population estimates and projections, by age group: 1971–2036

United Kingdom



Millions

Age	1971	1991	2004	2011	2021	2036
65+	7.41	9.06	9.58	10.49	12.74	16.46
15–64	35.05	37.37	39.39	40.91	41.30	40.68
0–14	13.47	11.01	10.87	10.50	10.68	10.63
Total	**55.93**	**57.44**	**59.84**	**61.89**	**64.73**	**67.77**

The overall population of the UK is estimated to have been 59.8 million in 2004, and is projected to increase by around 13 per cent by 2036. Longer term the UK population is projected to continue rising until the limit of the projection in 2074.

The projection indicates an ageing population: those over 65 are projected to increase from 16 per cent of the total to 24 per cent by 2036; those aged between 15–64 years are projected to decrease from 66 per cent of the 2003 total to 60 per cent by 2036.

(See also Explanatory Notes page 67).

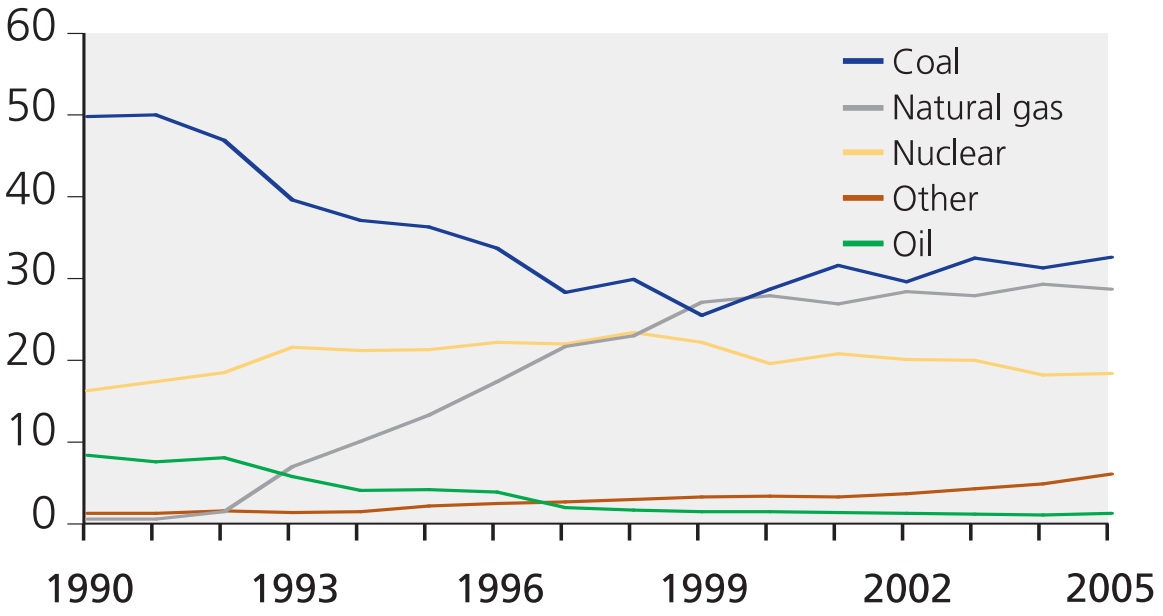
Source: GAD, ONS, GROS, NISRA

Further details: www.defra.gov.uk/environment/statistics/supp/index.htm

Fuel used for electricity generation: 1990–2005

United Kingdom

Million tonnes of oil equivalent



Percentage of fuel input for electricity generation

	1990	1996	2000	2005
Coal	65	42	35	37
Natural gas	1	22	34	33
Nuclear	21	28	24	21
Oil	11	5	2	2
Other	2	3	4	7

Between 1990 and 2005 total fuel use for electricity rose by 14 per cent from 76 to 87 million tonnes of oil equivalent.

The contribution of coal and oil in electricity generation decreased in the 1990s whilst that of natural gas increased. This trend has levelled off in recent years as coal prices have been more favourable compared to gas. The contribution of nuclear power peaked in 1998 at over 23 million tonnes (28 per cent), but in 2005 had fallen to be similar to the early 1990s contributing 21 per cent of electricity generated. The contribution of other fuels (including renewables) has been small but increased by almost four times over the period.

(See also Explanatory Notes page 67).

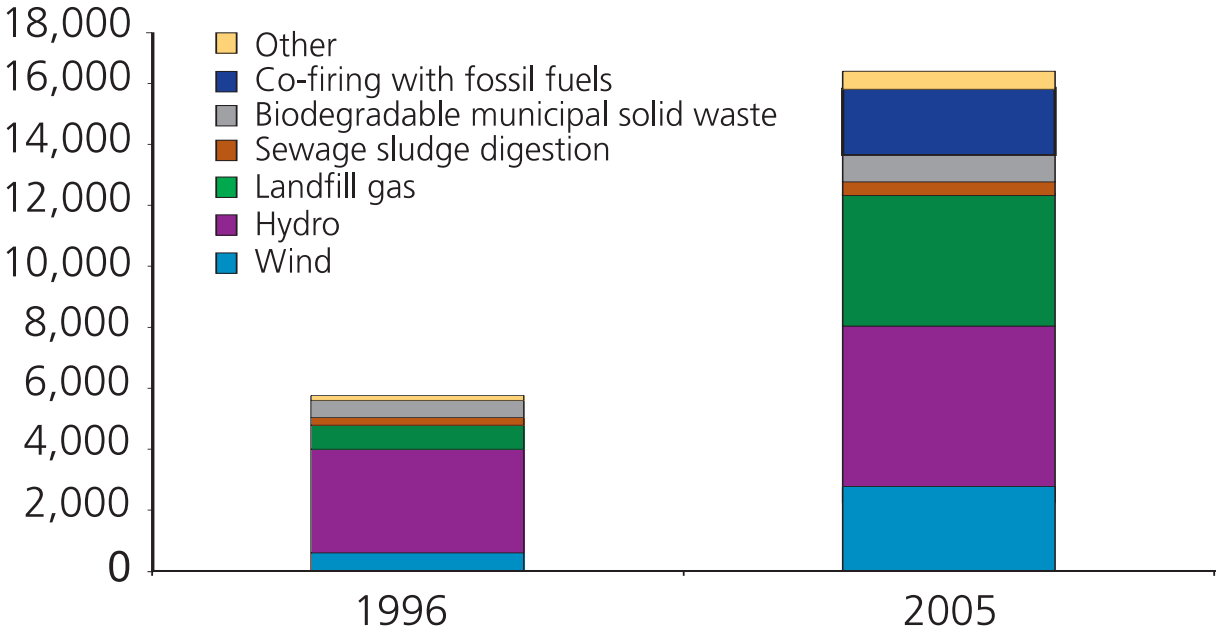
Source: DTI

Further details: www.defra.gov.uk/environment/statistics/supp/index.htm

Electricity generated by renewable sources: 1996–2005

United Kingdom

Electricity generated (GWh)



			Gigawatt hours
Electricity generated from renewables in 2005			
Co-firing with fossil fuels	1,022	Hydro power	4,961
Biodegradable municipal solid waste	964	Wind	2,908
Sewage sludge digestion	400	Landfill Gas	4,290
		Other	863
		Total	16,919

Electricity from renewable sources has grown rapidly in recent years, accounting for 4.2 per cent of electricity generated in the UK in 2005.

But hydro power remains the largest renewable source, generating nearly 5 GWh in 2005, but the largest increases between 1996 and 2005 have been for landfill gas combustion (3.6 GWh increase), co-firing of biomass with fossil fuels (2.5 GWh increase) and wind power (2.4 GWh increase).

Note: Gigawatt = a thousand million watts

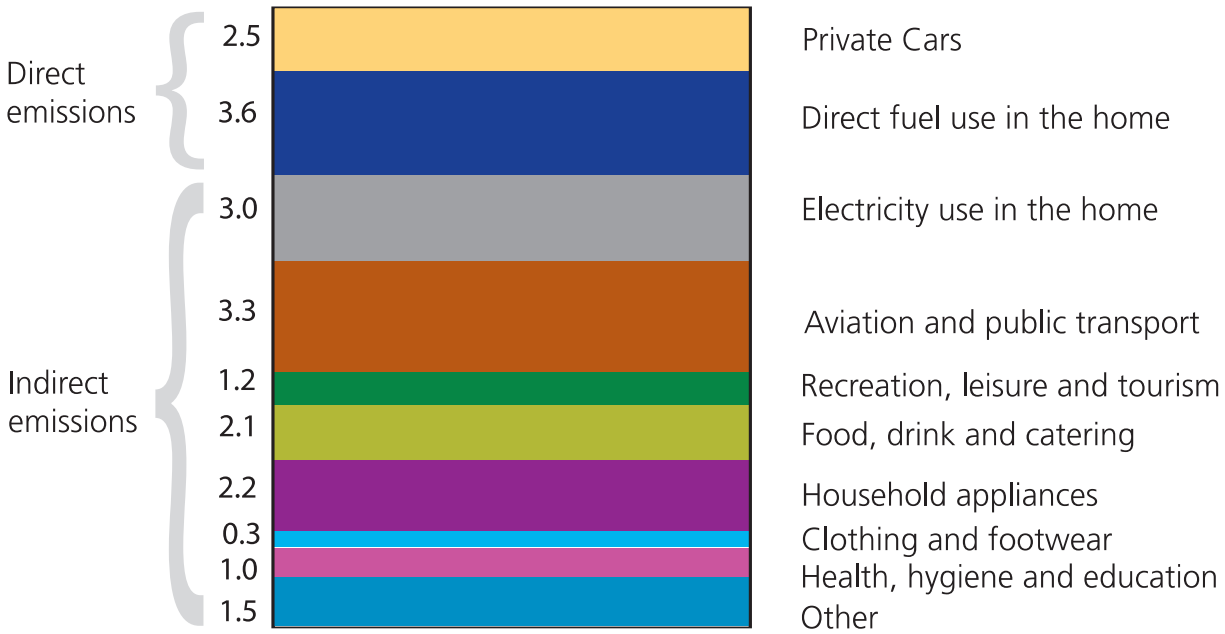
(See also Explanatory Notes page 67).

Source: DTI

Further details: www.defra.gov.uk/environment/statistics/supp/index.htm

Carbon dioxide emissions associated with household consumption: 2001

United Kingdom



Total = 20.7 tonnes of CO_2 emissions per household

Indirect emissions are the emissions that occur during the generation of electricity and the production of goods and services (whether they are produced in the UK or in other countries). Direct emissions occur during the use of products.

Indirect emissions made up 70 per cent of the almost 21 tonnes of CO_2 emissions per household associated with household consumption in 2001.

Transport (private cars, aviation and public transport) accounted for 28 per cent of all emissions.

Electricity use in the home and use of fuels for space and water heating in the home accounted for almost a third of the emissions.

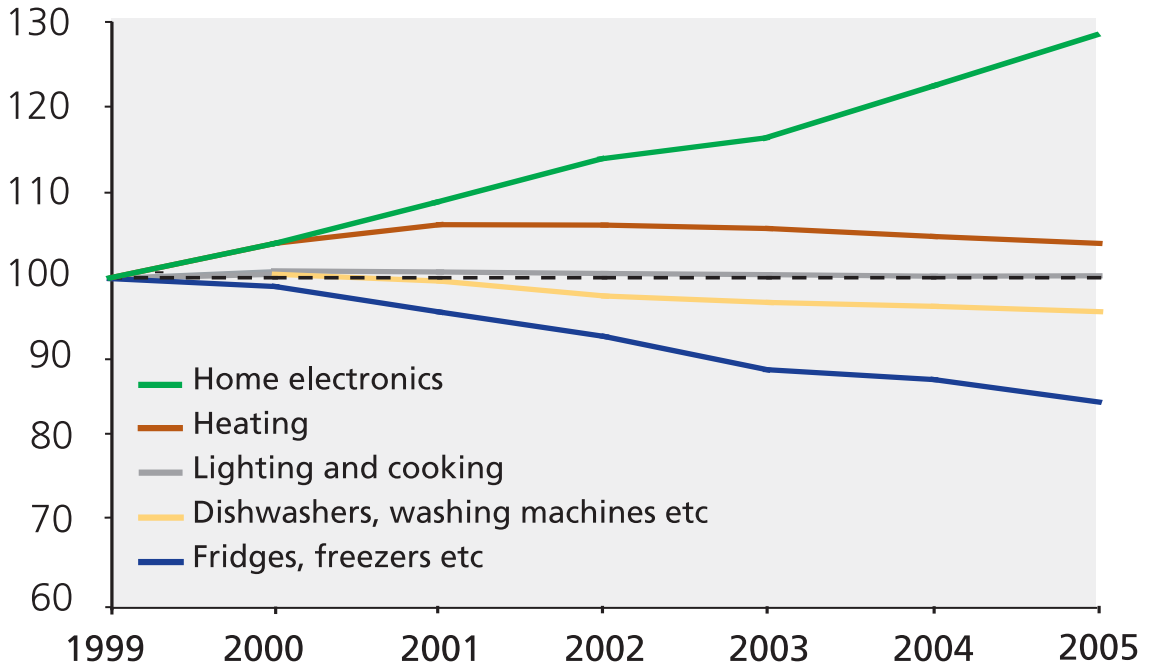
(See also Explanatory Notes page 67).

Source: Stockholm Environment Institute, York

Further details:www.defra.gov.uk/environment/statistics/supp/index.htm

Total energy consumption per household from common household products: 1999–2005

United Kingdom



	Megawatt hours (MWh) per household			
	1999	2000	2004	2005
Home electronics	0.6	0.6	0.8	0.8
Heating	13.7	14.6	14.5	14.4
Lighting & cooking	1.4	1.4	1.4	1.4
Dishwashers etc.	0.5	0.5	0.5	0.5
Fridges etc.	0.7	0.7	0.6	0.6
Total	17.0	17.9	17.8	17.7

Total energy used by home electronics rose by 30 per cent between 1999 to 2005 from 0.6 MWh to 0.8 MWh per household. Total energy used by fridges, freezers etc has decreased by 17 per cent from 0.7 MWh per household to 0.6 MWh per household. In absolute terms the main use of energy is for heating, totalling 14.4 MWh per household in 2005, 81 per cent of all household energy use.

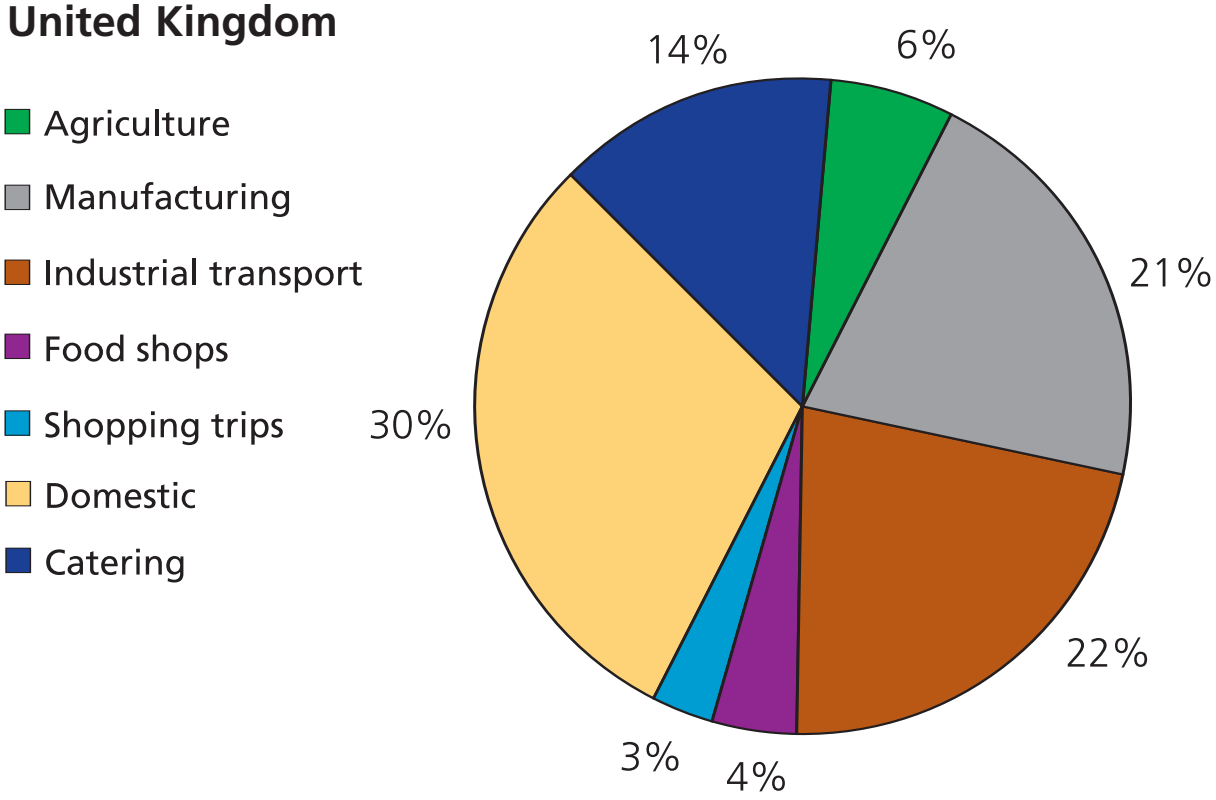
(See also Explanatory Notes page 67).

Source: Market Transformation Programme

Further details:www.defra.gov.uk/environment/statistics/supp/index.htm

Food energy use from "field to plate": 2004

United Kingdom



Total = 315 TWh

The total energy used to get food from growing on the farm to the consumers' plates is equivalent to 12 per cent of total UK energy consumption.

Around half of the energy used is for growing the food, manufacturing and transporting it.

Just over 30 per cent of the total food energy is used in the home, in the storage, preparation and cooking of food.

Note: TWh = terawatt (million million watts) hours

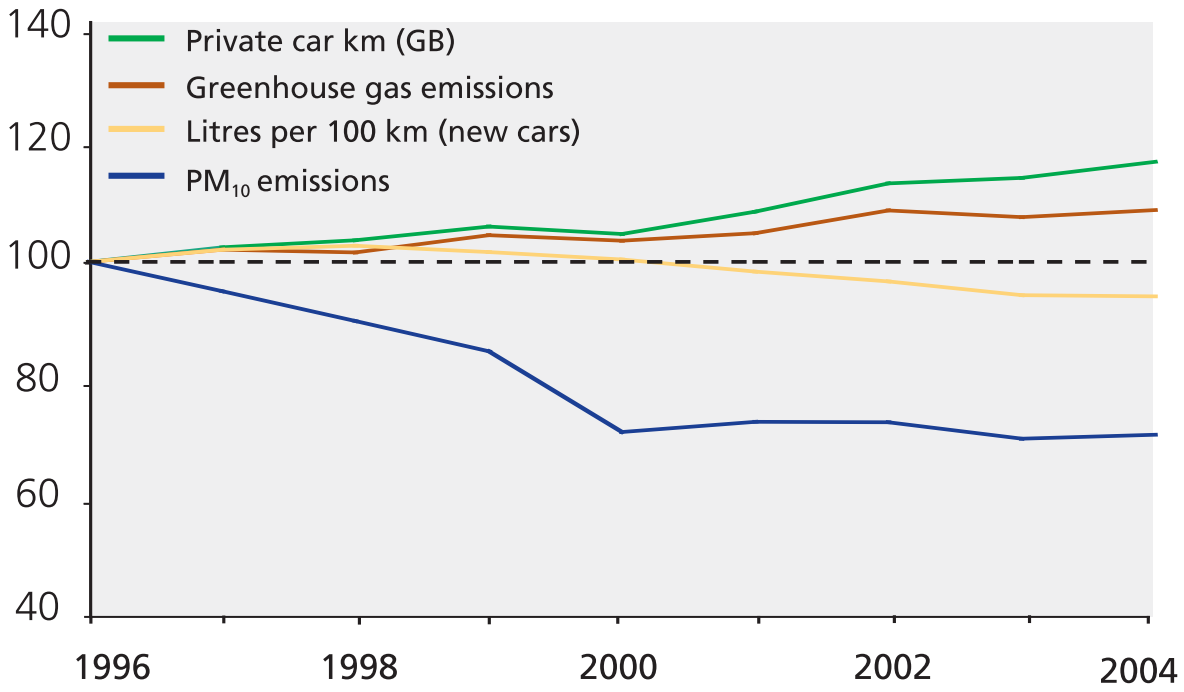
Source: Defra, DTI

Further details: www.defra.gov.uk/environment/statistics/supp/index.htm

Distance driven, fuel use and emissions by car transport: 1996–2004

United Kingdom

Index (1996 = 100)



Between 1996 and 2004 the amount of fuel used for each 100 km driven by new cars in the UK decreased by 6 per cent as a result of improvements in efficiency.

In spite of this, emissions of greenhouse gases from private cars rose by 9 per cent mainly because of increasing distances travelled by car. Distances driven by private cars increased by 17 per cent in this period.

The use of catalytic converters in petrol cars has allowed a significant breaking of the linkage between of emissions of pollutants, such as particulates, and the growth in road traffic. Particulate (PM_{10}) emissions declined by 28 per cent between 1996 and 2000 but subsequently have not decreased further as the improvements have been offset by an increase in the use of, and emissions from, diesel cars.

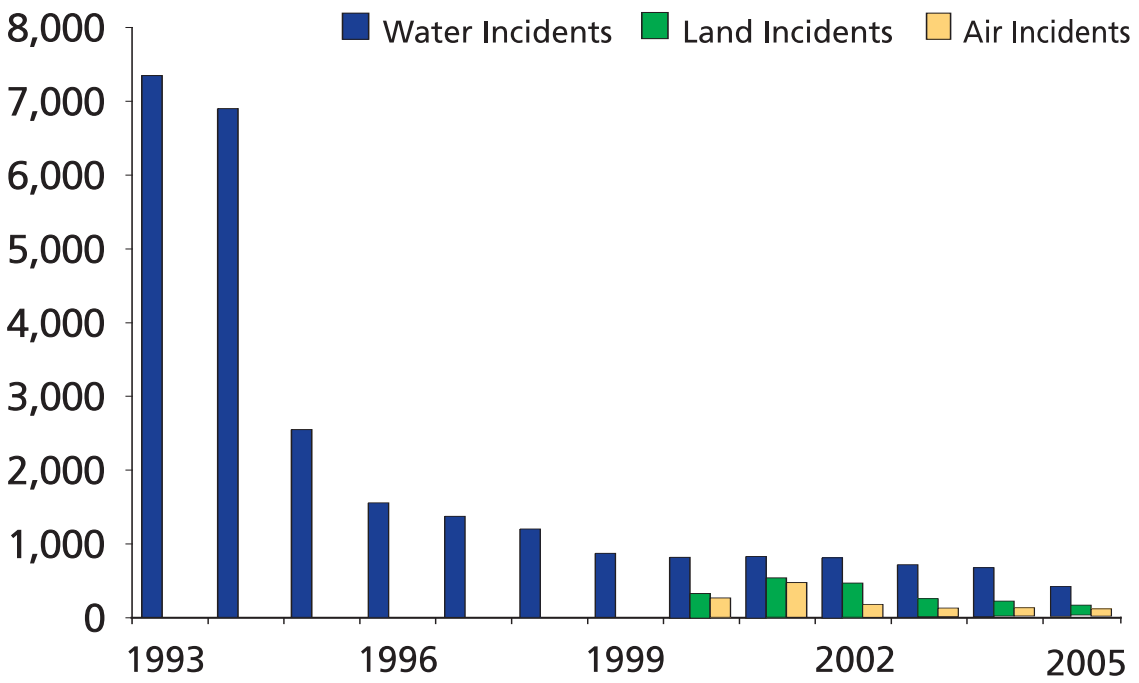
Note: Private car km is for GB only.

Source: DfT, ONS, netcen

Further details:www.defra.gov.uk/environment/statistics/supp/index.htm

Serious pollution incidents affecting water, air or land: 1993–2005

England and Wales



Number of serious (category 1 and 2) pollution incidents

	1993	1996	2000	2004	2005
Water	7,094	1,666	835	708	661
Land	..	..	242	377	241
Air	..	..	232	183	154

There were 990 serious (category 1 and 2) pollution incidents in 2005, the lowest number on record.

The sewage and water industry caused almost a quarter of serious water pollution incidents in 2005, while farming and other industry caused 17 per cent and 13 per cent respectively.

The waste management industry caused over half of serious air pollution incidents, and almost a quarter of serious land pollution incidents.

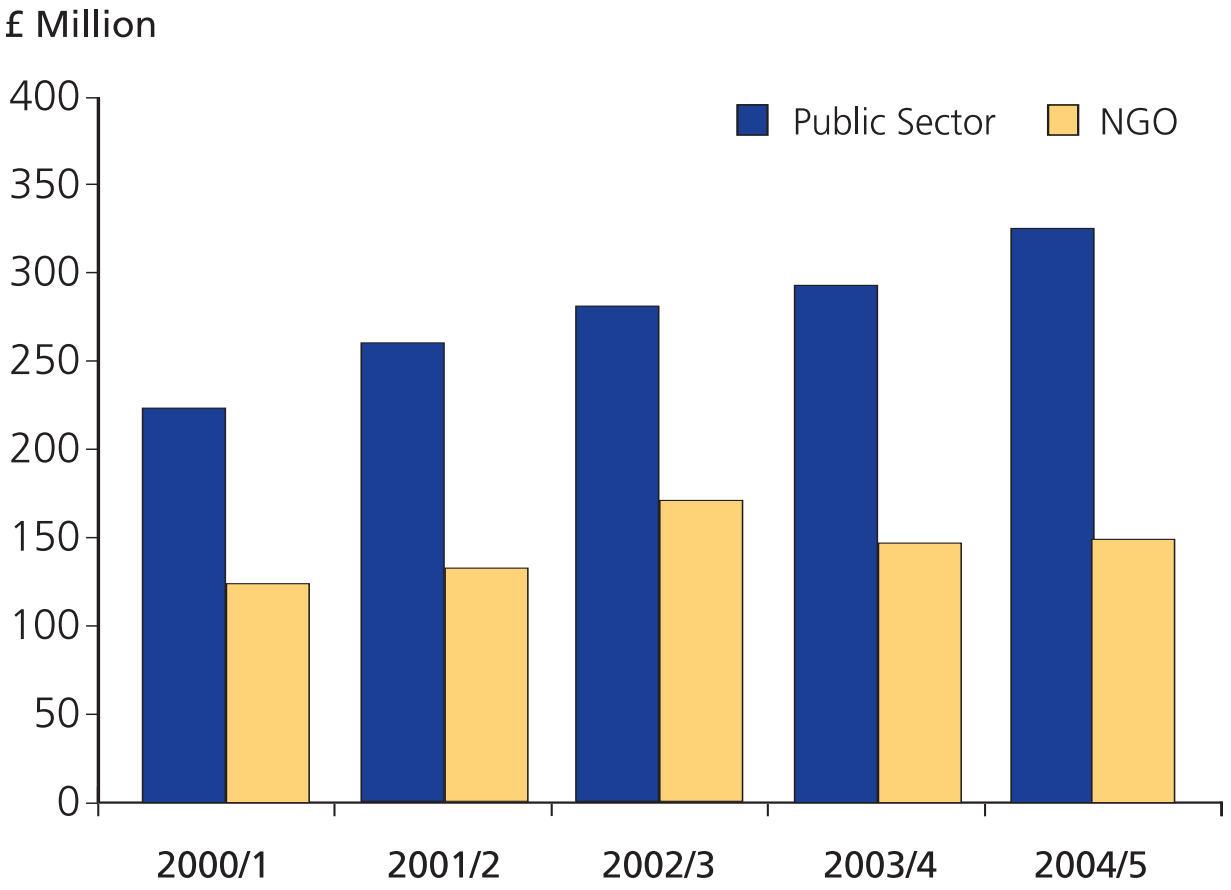
(See also Explanatory Notes page 68).

Source: Environment Agency

Further details:www.defra.gov.uk/environment/statistics/supp/index.htm

Spending on biodiversity: 2000/1–2004/5

United Kingdom



By 2004/5, public sector expenditure on biodiversity (such as protection of natural habitats and species) had increased by 46 per cent in real terms compared with the amounts spent in 2000/1. Over the same period GDP in the UK rose by 11 per cent.

The trend for spending by non-government organisations (NGOs) is less clear as expenditure has fluctuated over the last five years. Spending peaked at £170 million in 2002/3, largely as a result of a large one-off purchase of land by the National Trust, and has since stabilised at about £150 million.

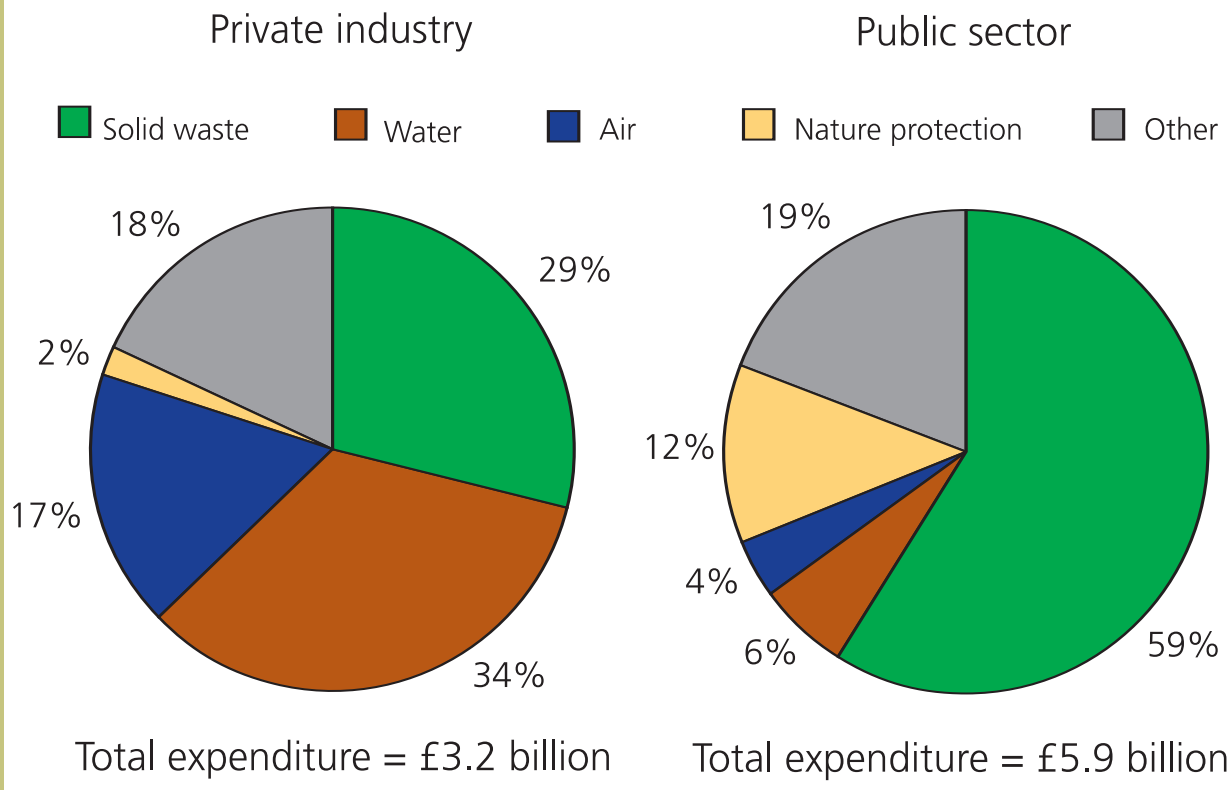
Note: Deflated using implied UK GDP deflator.

Source: ONS

Further details: www.defra.gov.uk/environment/statistics/supp/index.htm

Environmental protection expenditure by private industry and the public sector: 2004

United Kingdom



Environmental protection expenditure is spending by companies or the public sector where the primary aim is to reduce environmental pollution. This includes expenditure to reduce or prevent emission to air or water, to dispose of waste materials, to protect soil and groundwater, to prevent noise and vibration, or to protect the natural environment.

Based on a survey, UK industry spent an estimated £3.2 billion on environmental protection expenditure in 2004. Around two-thirds of the spending was divided between solid wastes and reduction of emissions of pollutants to water.

In 2004 the public sector in the UK spent an estimated £5.9 billion on environmental protection expenditure. Again almost two-thirds of the spending was on solid wastes and reduction of water pollution (mostly on solid wastes).

Note: Nature protection includes also landscaping.

Source: Defra

Further details:www.defra.gov.uk/environment/statistics/envsurvey/index.htm

Climate change

Climate change and greenhouse gases

The temperature of the earth is determined by a balance between energy coming in from the sun and energy emitted from the earth to space. Some of the outgoing radiation is absorbed by naturally occurring greenhouse gases, including water vapour, creating a natural greenhouse effect which keeps the surface of the earth around 33°C warmer than it would otherwise be and helps to sustain life.

Since the beginning of the Industrial Revolution (around AD 1750), concentrations of the long-lived greenhouse gases in the atmosphere – carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (NO_2) – have risen as a result of human activities. At the same time, changes in global climate have occurred and in 2001,the Intergovernmental Panel on Climate Change, reported that "there is new and stronger evidence that most of the warming over the last 50 years is attributable to human activities". It also concluded that we can expect a rise in global temperatures of between 1.4 and 5.8°C by the end of the 21st century. Climate change scenarios for the UK suggest that the average temperature across the UK could increase by 2 to 3.5°C by the 2080s.

The UK contributes about 2 per cent to global man-made emissions of CO_2, the main greenhouse gas, which are estimated at between 6.2 and 6.9 billion tonnes carbon per annum.

Under the Kyoto Protocol, the UK has agreed to reduce emissions of a "basket" of six greenhouse gases – CO_2, CH_4, NO_2, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) – by 12.5 per cent below 1990 levels by the period of 2008–2012. The UK Government also has a domestic goal to cut CO_2 emissions by 20 per cent below 1990 levels by 2010, and a longer term goal to put the UK on a path to reduce CO_2 emissions by 60 per cent by 2050.

(See also Explanatory Notes page 68).

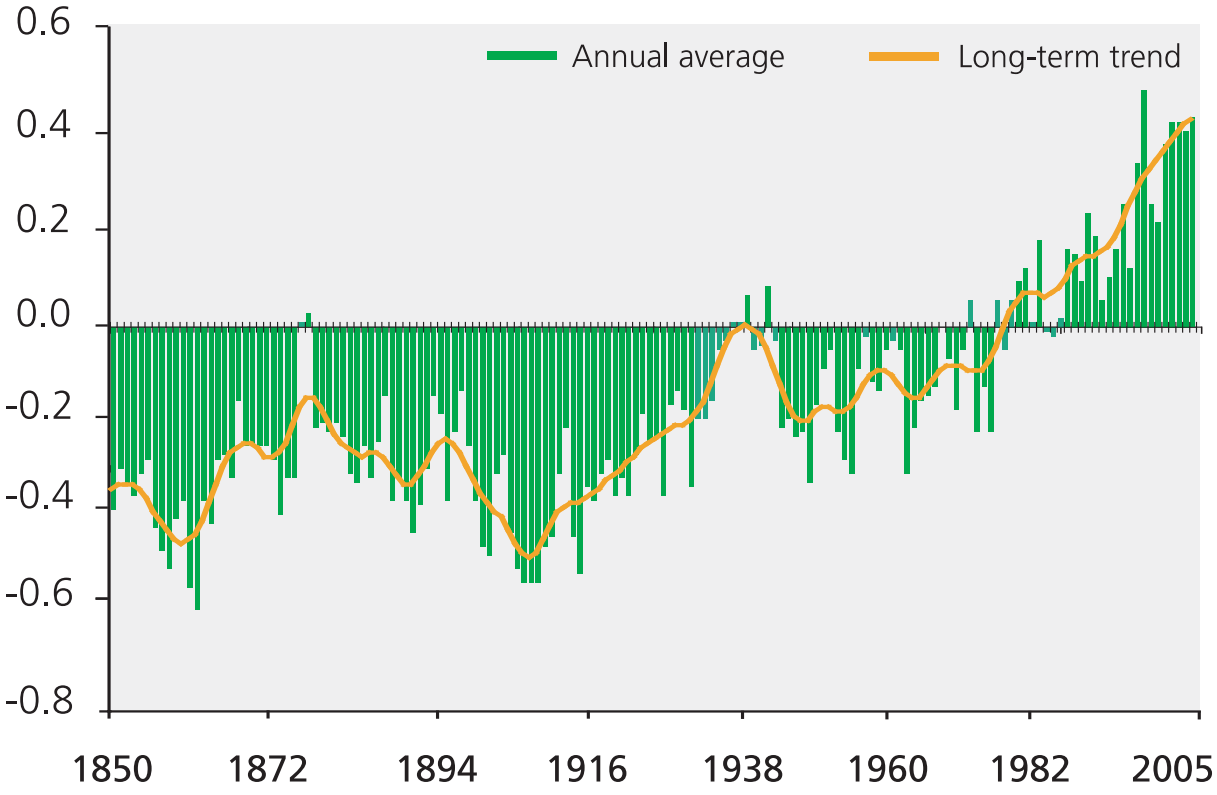
Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Climate change

Average surface temperature: 1850–2005

Global

Anomaly in degrees C (compared to 1961–1990 average)



All ten of the hottest years since records began in 1850 have been since 1990. 2005 was the second hottest year recorded in that period; 1998 was the hottest year.

Over the past century global temperatures have risen by 0.7°C on average, which takes us out of the range of average temperatures experienced on Earth over the last 1,000 years. Studies of this trend show that it is statistically significant and is primarily caused by human activities.

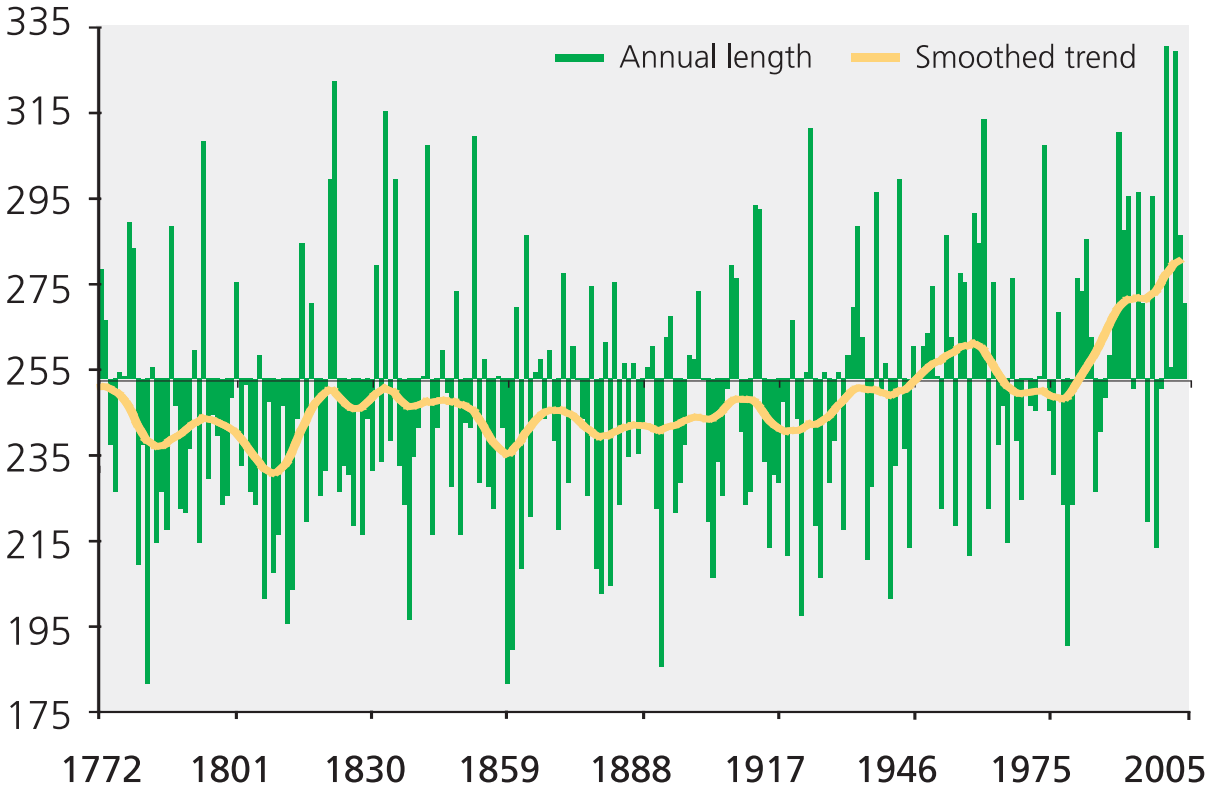
Source: Hadley Centre

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Length of the growing season: 1772–2005

England

Number of days



Number of days

	1961–1990 avg	2000	2003	2004	2005
Growing season length	252	330	286	270	247

The growing season is the period of time each year during which plants can grow. The thermal growing season length is defined as beginning when the temperature on five consecutive days exceeds 5˚C and ending when the temperature on five consecutive days is below that threshold.

The increase in growing season length since 1980 is largely due to the earlier onset of spring. The earliest start of the thermal growing season was in 2002 when it began on 13 January. The longest growing season in the 233-year series was 330 days, in 2000, and the shortest was 181 days in 1782.

(See also Explanatory Notes page 68).

Source: Met Office, Mitchell, T. D., Hulme, M., 2002: Length of the growing season. Weather 57: pp196–198

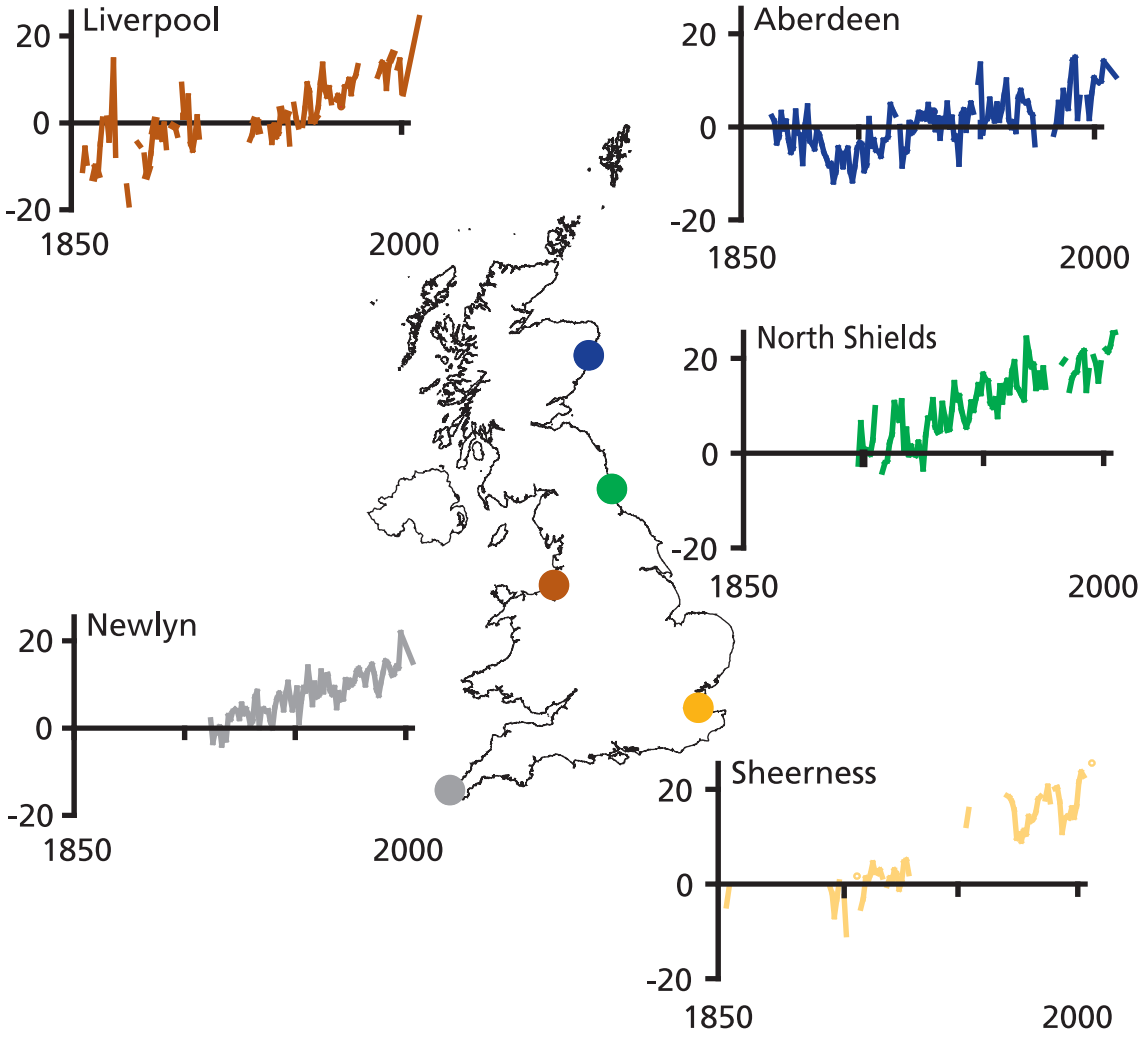
Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Climate change

Sea level rise at selected sites: 1850–2004

United Kingdom

Anomaly (cm) compared to 1920 baseline



Global-average sea level rose by 10–20 cm during the past century and best estimates are that it will rise by about 50 cm in the next 100 years. Rising sea levels are the result of various factors including the thermal expansion of the ocean and the melting of low latitude glaciers.

All the sites shown indicate a rise in historic mean sea level, ranging from 0.6mm per year at Aberdeen to 2mm per year at Sheerness. This reflects a UK sea level rise of approximately 1mm per year combined with long term geological movements (which are causing the south and east to sink and the north to rise).

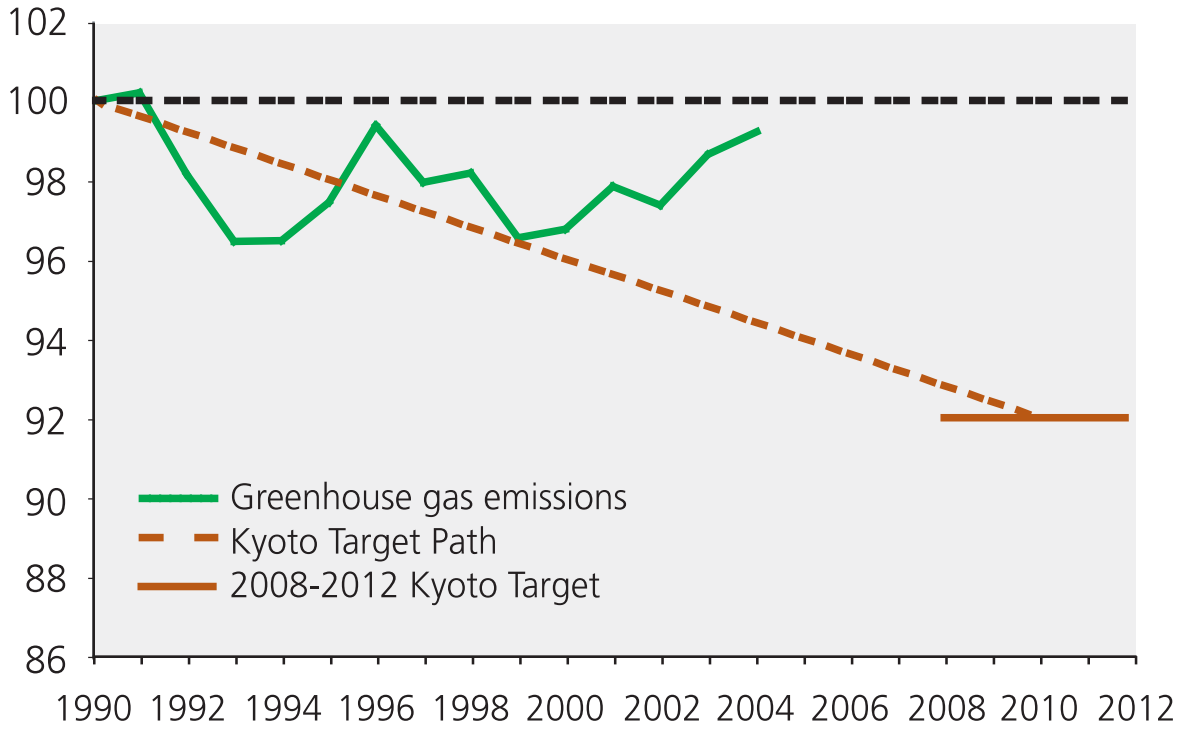
Source: Proudman Oceanographic Laboratory

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

EU emissions of greenhouse gases compared with Kyoto Protocol target: 1990–2012

EU–15

Index (1990 = 100)



Under the Kyoto Protocol, the EU–15 (pre-2004 member states) has a target to reduce greenhouse gas emissions to 8 per cent below 1990 (base-year) levels by 2008–2012.

In 2004 total EU–15 emissions rose by 0.3 per cent compared to 2003 but were by 0.6 per cent below 1990 levels.

The fall between 1990 and 2004 was largely due to reductions in emissions of over 18 per cent in Germany and 14 per cent in the UK.

Total emissions in the EU–25 (all member states), increased by 0.4 per cent in 2004 but decreased by almost 5 per cent between 1990 and 2004.

(See also Explanatory Notes page 68).

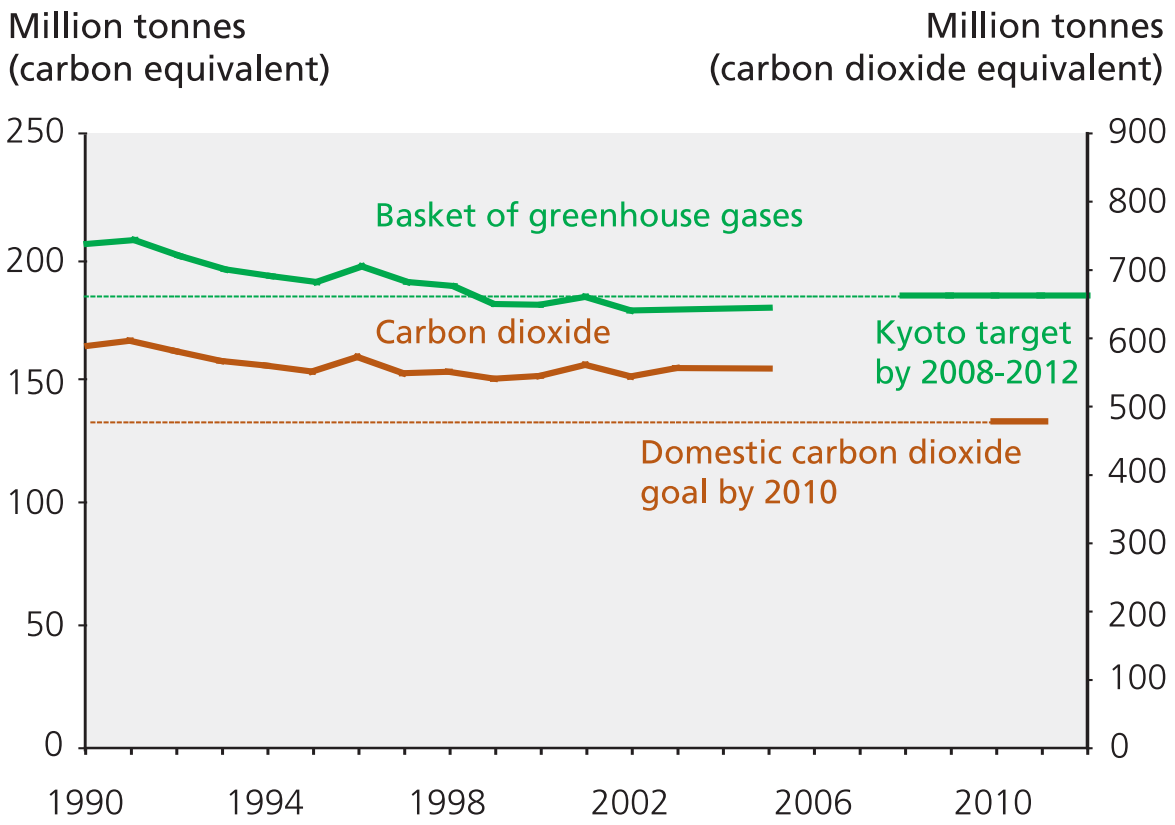
Source: European Environment Agency (EEA)

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Climate change

Emissions of greenhouse gases: 1990–2005

United Kingdom



Million tonnes (carbon)

	1990	1995	2000	2003	2004	2005(p)
Basket of gases	211	194	183	180	181	181
Carbon dioxide	161	150	149	152	152	153

In 2004 UK emissions of the "basket" of six greenhouse gases were 15 per cent below the Kyoto baseline compared with a target of a 12½ per cent reduction by 2008–2012. Emissions of carbon dioxide (CO_2), the main greenhouse gas fell by 5 per cent between 1990 and 2004. The UK aims to reduce CO_2 emissions by 20 per cent below 1990 levels by 2010.

Provisional estimates for 2005 put CO_2 and greenhouse gas emissions at about the same levels as in 2004.

Note: p = provisional figures.

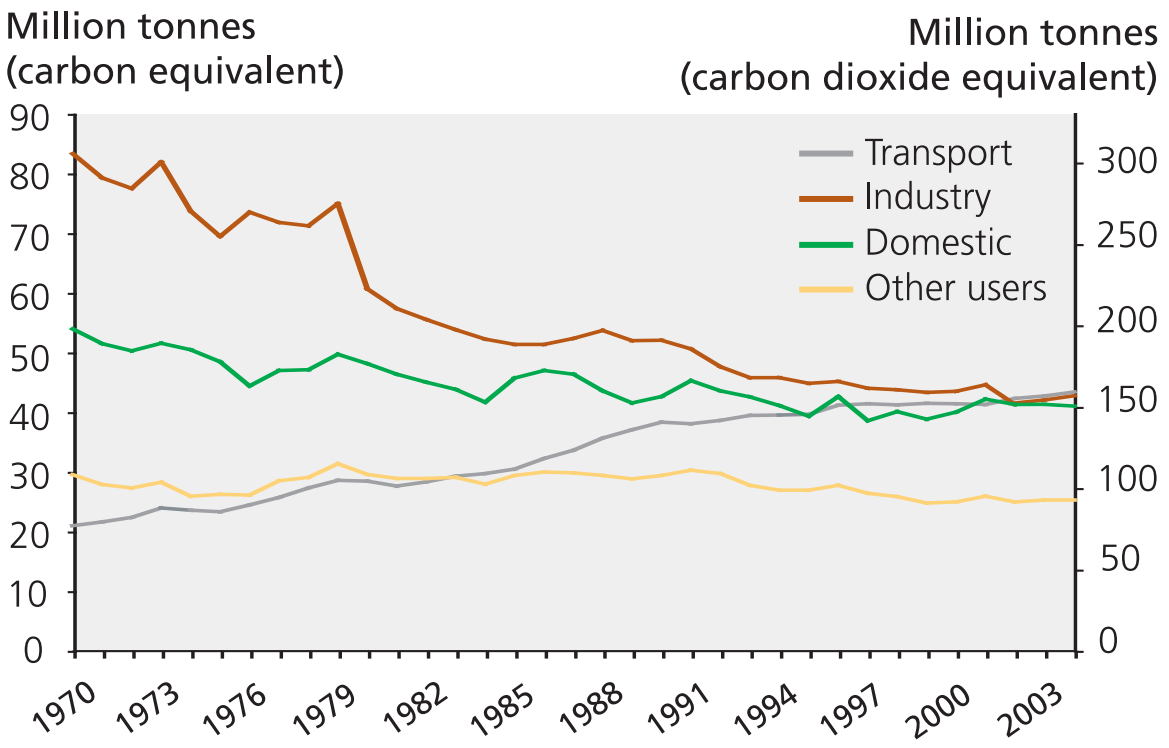
(See also Explanatory Notes page 68).

Source: netcen

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Carbon dioxide emissions, by end user: 1970–2004

United Kingdom



Million tonnes (carbon)

	1970	1980	1990	2000	2004
Transport	21	28	38	41	43
Industry	83	60	52	43	43
Domestic	54	48	42	40	43
Other end users	29	29	29	25	25

Figures for end users show emissions from power stations and energy industries allocated to those using the electricity or fuel produced.

In 2004, industry and the transport sector each accounted for around 28 per cent of emissions and domestic users accounted for a further 27 per cent of emissions. Between 1970 and 2004, total carbon dioxide emissions fell by 18 per cent, largely the result of a halving of emissions attributable to industry Emissions caused by domestic users have declined by 22 per cent since 1970; those attributable to transport have more than doubled.

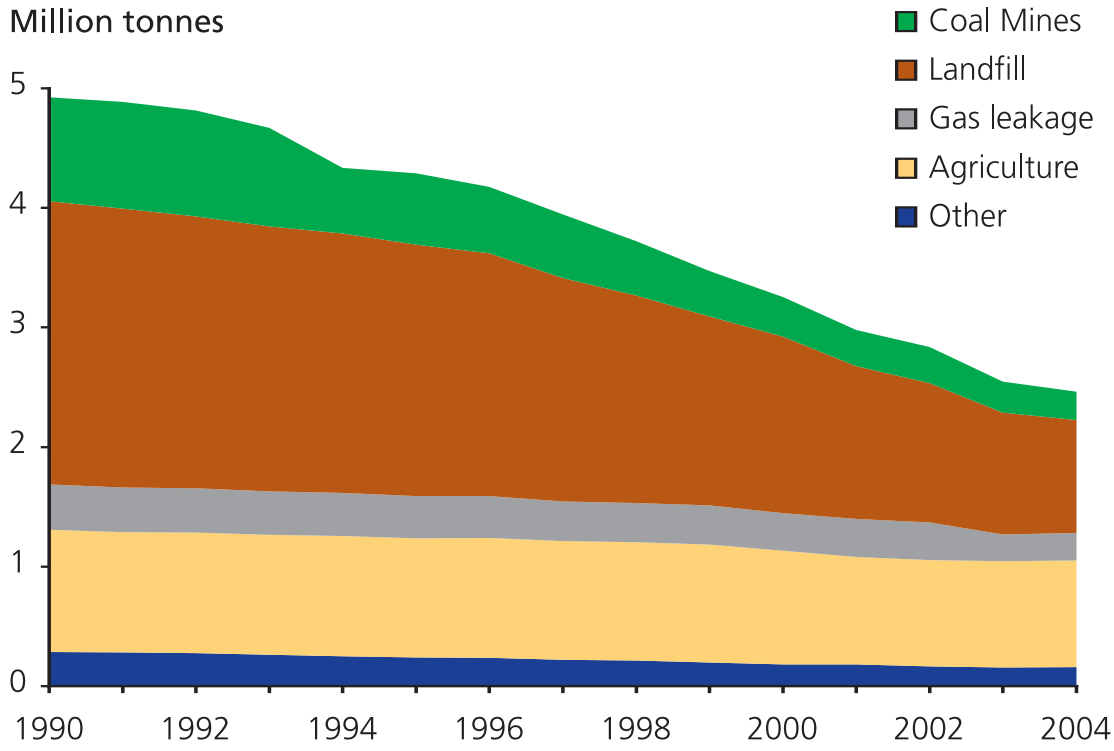
(See also Explanatory Notes page 68).

Source: netcen

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Methane emissions, by source: 1990–2004

United Kingdom



Thousand tonnes

	1990	1996	2000	2003	2004
Coal mines	870	556	333	259	234
Landfill	2,367	2,031	1,474	1,017	944
Gas leakage	379	349	315	223	231
Agriculture	1,023	1,003	953	892	893
Other sources	286	238	181	154	159
Total emissions	4,925	4,176	3,255	2,546	2,461

In 2004, methane accounted for about 8 per cent of the UK's "basket" of greenhouse gas emissions. Total UK emissions of methane were around half the1990 levels. In 2004 the main sources were landfill sites (38 per cent) and agriculture (36 per cent of the total). Emissions from landfill have reduced by 60 per cent since 1990 and emissions from agriculture by 13 per cent.

Note: in August 2006 the figures for methane emissions were revised from those previously published.

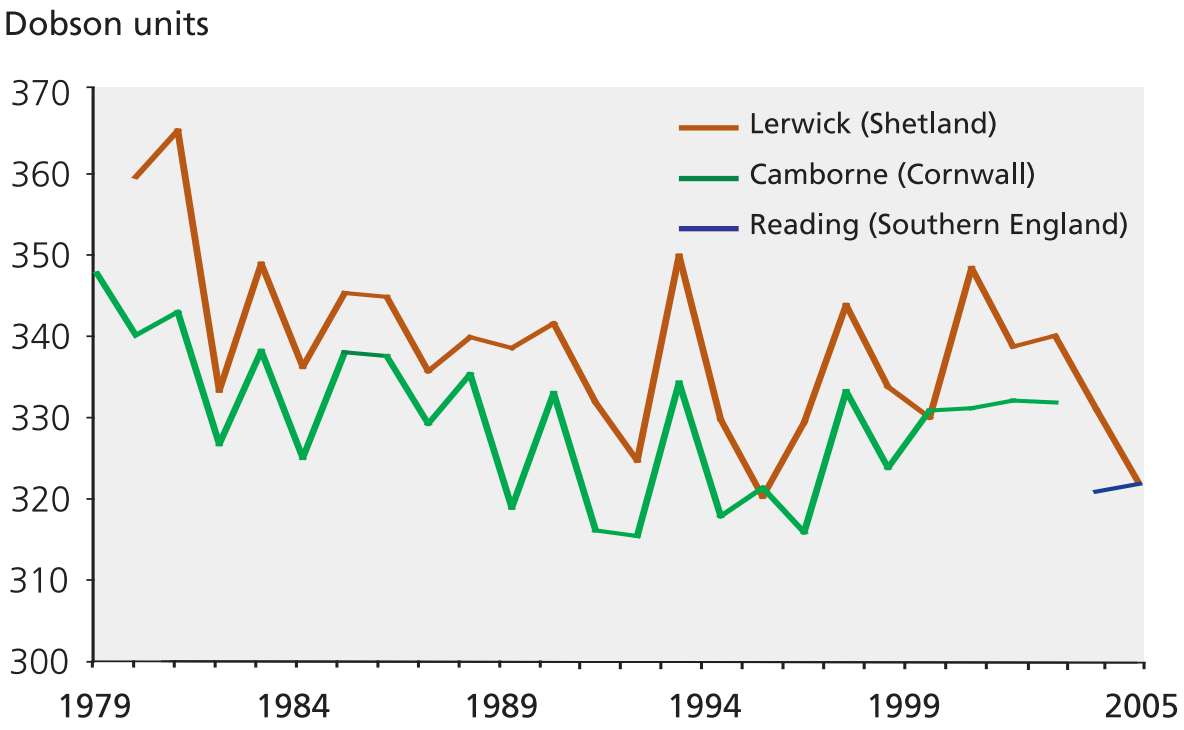
(See also Explanatory Notes page 68 & 69).

Source: netcen

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Column ozone levels in the UK: 1979–2005

United Kingdom



The stratospheric ozone layer protects us from damaging ultraviolet radiation from the sun. It is depleted by man-made emissions of substances containing chlorine and bromine.

Column ozone levels measured in the UK have fluctuated, but generally decreased during the 1980s and 1990s, at about 3 per cent a decade. More recently it appears that the trends may be levelling out, but it is too soon to be sure. Levels of ozone-depleting substances in the lower atmosphere have been reduced since the 1980s, but the recovery of the ozone layer will take decades.

Note: The Camborne site closed in December 2003.

Source: Met Office, netcen

Further details: www.defra.gov.uk/environment/statistics/globatmos/index.htm

Air Quality

Air quality and some important air pollutants

For most air pollutants, the main sources of emissions are fossil-fuel combustion (electricity generation, heating and vehicles).

Sulphur dioxide (SO_2) and nitrogen oxides (NO_X) emissions contribute to acidification and local air pollution. Sulphur dioxide is an acid gas and can affect health and vegetation. It affects the lining of the nose, throat and airways of the lung. Nitrogen oxides are acid gases and ozone pre-cursors and can affect human health and vegetation. Nitrogen dioxide (NO_2) is thought to have both short and long term effects on airways and lung function.

Airborne particulate matter (usually measured as PM_{10}) is very diverse and includes products of combustion, dust, grit, seasalt and biological particles. It has many sources, such as road traffic, construction work and chemical reactions in the atmosphere. Fine particles can be carried into the lungs and can be responsible for causing premature deaths among those with pre-existing lung and heart disease.

At ground level, ozone (O_3) occurs naturally but levels can be increased as a result of reactions between NO_X, oxygen and volatile organic compounds (VOCs) in the presence of sunlight. Once formed, O_3 can persist for several days and can be transported long distances. It can cause irritation to the eyes and nose and exceptionally the airway lining (when levels are very high), and can also damage plants and crops.

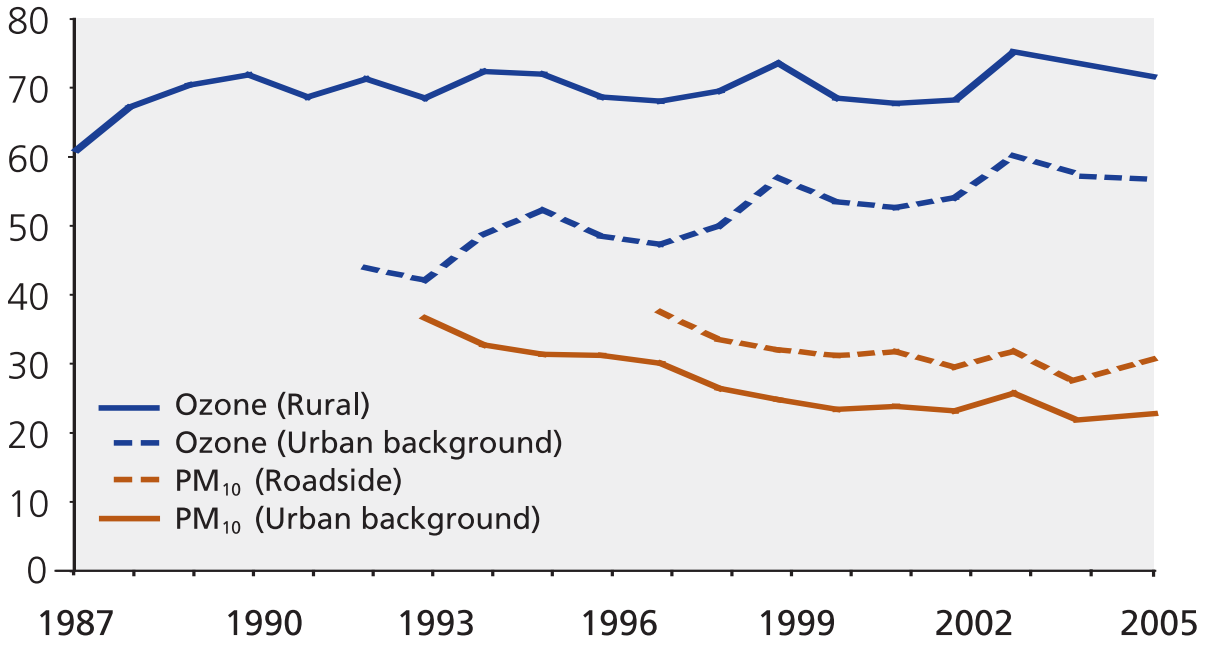
Persistent organic pollutants (POPs) can accumulate in the tissues of man and animals. These include polycyclic aromatic hydrocarbons (PAHs), a class of hydrocarbons emitted by motor vehicles, industrial processes and processes where there is incomplete combustion, such as bonfires. They are toxic in high concentrations and some may cause cancer.

(See also Explanatory Notes page 68 & 69).

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Annual levels of particles and ozone in the air: 1987–2005

United Kingdom



(ozone = annual average of daily maximum 8 hour running mean; PM_{10} = annual average) µg m^{-3}

	1987	1996	2000	2004	2005
Ozone (Rural)	60	68	68	73	70
Ozone (Urban background)	..	48	53	57	57
PM_{10} (Roadside)	..	..	31	27	29
PM_{10} (Urban background)	..	31	23	22	22

The two types of air pollution believed to have the most significant impacts on public health are long-term exposure to particulate matter (PM_{10}) and daily peak ozone levels.

Annual average urban background PM_{10} levels decreased from 31 µg m^{-3} to 22 µg m^{-3} between 1996 and 2005, although the trend may be levelling off. However, urban background ozone levels showed a corresponding increase over the same period. This increase is due to the reduction in urban emissions of nitrogen oxides, which destroy ozone close to their emission source. *(See also Explanatory Notes page 68 & 69).*

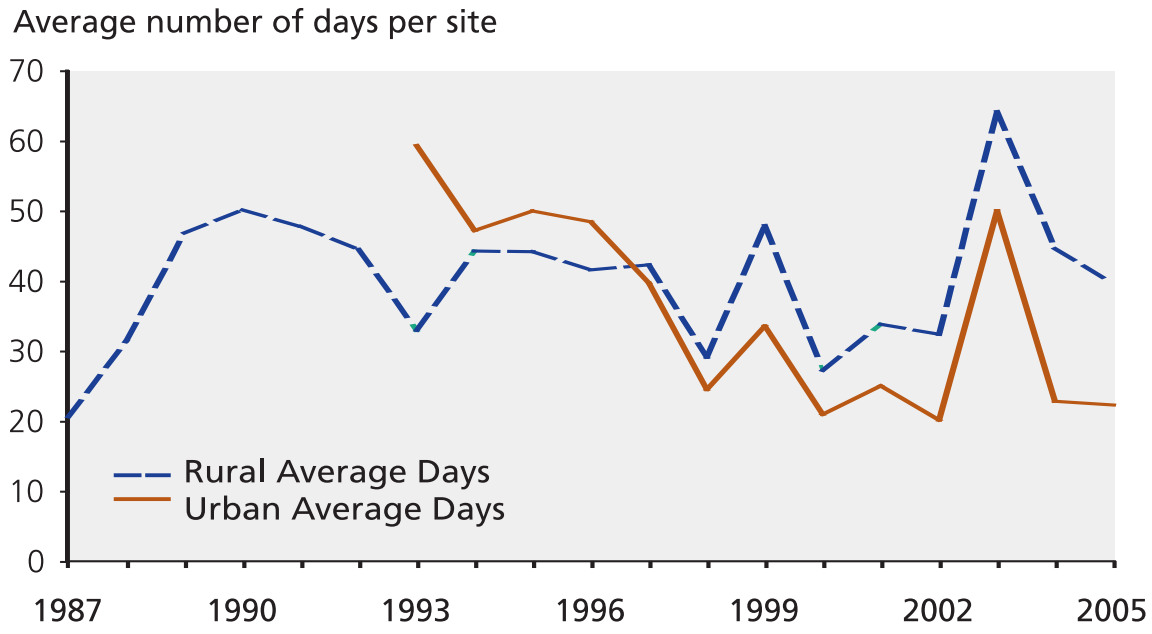
Source: Defra, netcen

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Air Quality

Days when air pollution is moderate or higher: 1987–2005

United Kingdom



Average number of days of moderate or higher air pollution per site

	1987	1996	2000	2004	2005
Rural sites	21	41	27	44	40
Urban sites	..	48	21	23	22

The average number of days with moderate or higher air pollution has generally decreased significantly in urban areas since 1996 largely because of a reduction in particles and sulphur dioxide. In rural areas where ozone is the main cause of pollution there has been no overall trend.

In 2005 there was an average of 22 days with moderate or higher pollution in urban areas and 40 days in rural areas.

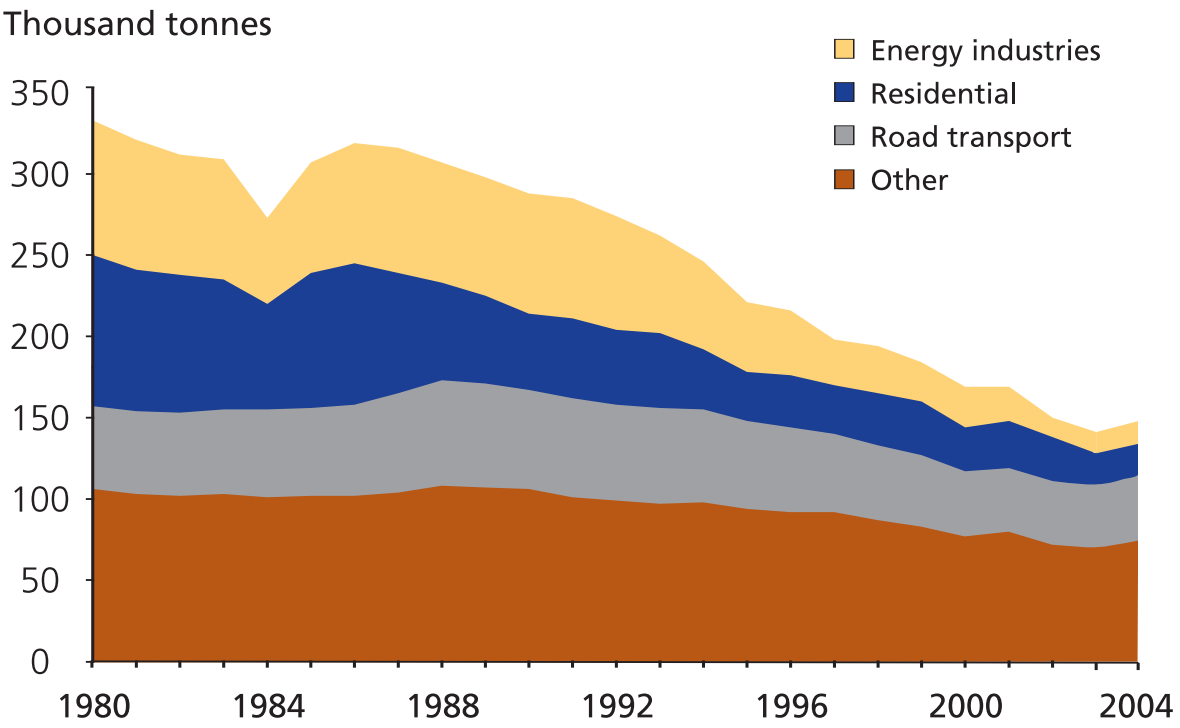
From year to year there can be significant variations caused by the weather, particularly for ozone, more of which is created in hot, sunny weather. For example, the hot summer of 2003 was a major factor in the high figures for that year.

Source: netcen

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Particulate (PM_{10}) emissions, by source: 1980–2004

United Kingdom



Thousand tonnes

	1980	1990	1996	2000	2003	2004
Energy industries	83	74	40	26	10	11
Residential	95	50	32	29	25	26
Road transport	51	60	52	39	36	35
Other sources	114	115	92	87	83	82
Total emissions	342	299	216	180	155	154

Coal burning, diesel combustion, construction, mining and quarrying are the major sources of particulate emissions.

Total emissions of PM_{10} fell by 55 per cent between 1980 and 2004. Over the same period, emissions from residential fossil fuel use fell by 73 per cent and emissions from the energy industries fell by 87 per cent. Emissions from road transport increased by 28 per cent between 1980 and the peak year of 1988 but by 2004 had fallen to 30 per cent below the 1980 level.

(See also Explanatory Notes page 68 & 69).

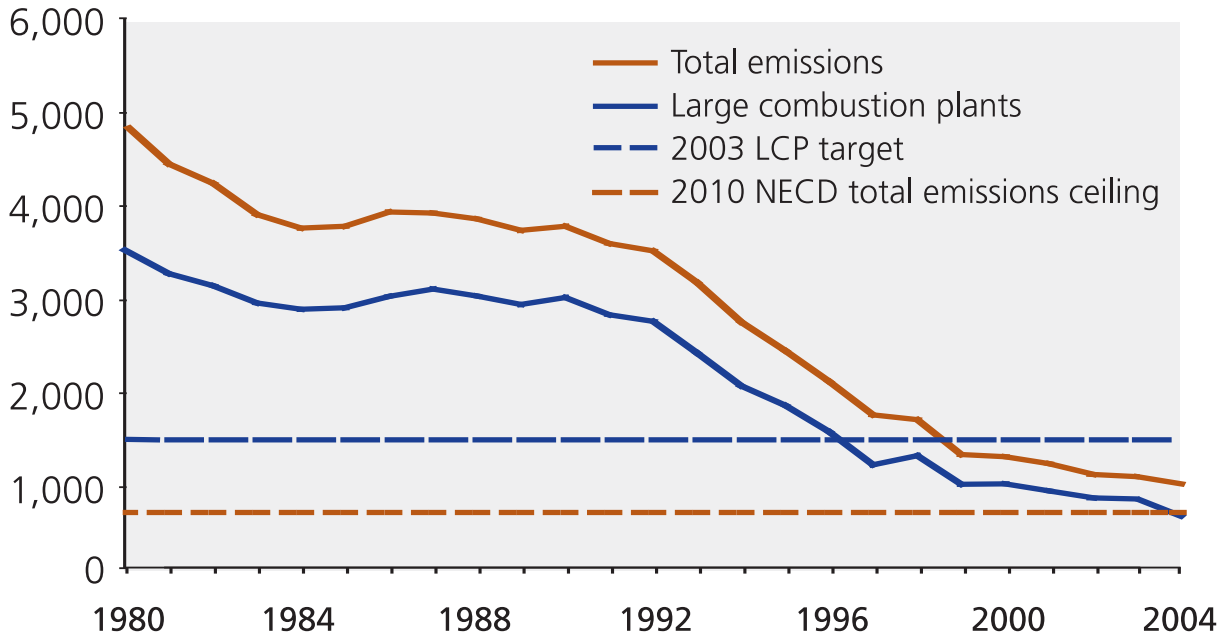
Source: Defra, netcen

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Sulphur dioxide emissions, by source and targets: 1980–2004

United Kingdom

Thousand tonnes



Thousand tonnes

	1980	1990	1996	2000	2004
Large combustion plants	3,457	2,934	1, 468	873	539
Other sources	1,381	765	531	300	294
Total emissions	4,838	3,699	1,999	1,173	833

Most sulphur dioxide (SO_2) emissions come from the burning of coal and fuel oil.

Total SO_2 emissions fell by 77 per cent between 1990 and 2004 to 833 thousand tonnes. This compares with targets for 2010 of 585 thousand tonnes under the EU National Emissions Ceiling Directive.

Emissions from Large Combustion Plants (LCPs) fell by 79 per cent between 1980 and 2003 compared with the EC LCP Directive target of a 60 per cent reduction on 1980 levels by 2003.

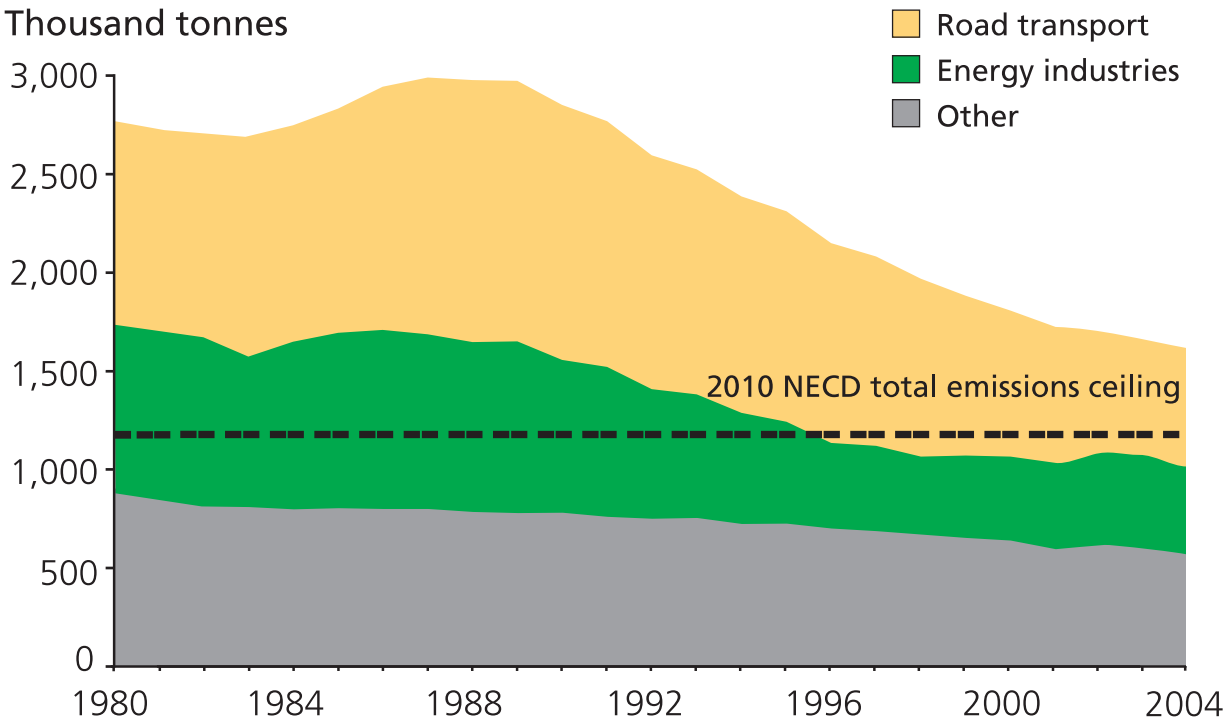
(See also Explanatory Notes page 68 & 69).

Source: Defra, netcen

Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Nitrogen oxides emissions, by source and targets: 1980–2004

United Kingdom



Thousand tonnes

	1980	1990	1996	2000	2003	2004
Road transport	989	1,324	1,068	818	634	595
Energy industries	937	853	512	413	457	445
Other sources	812	756	698	626	595	581
Total emissions	2,737	2,933	2, 278	1,857	1,685	1,621

Motor spirit, diesel and coal burning are the major sources of NO_X emissions. Total emissions of NO_X fell by 41 per cent between 1980 and 2004 to 1,621 tonnes. This compares with a target of 1,167 thousand tonnes by 2010 under the EU National Emissions Ceiling Directive (NECD).

Emissions from road transport peaked at 1.33 million tonnes in 1989; between 1996 and 2004 they fell by 44 per cent. Emissions from the energy industries fell by 13 per cent between 1996 and 2004 but have increased since 1999. In 2004 road transport and energy industries accounted for almost two-thirds of total emissions. *(See also Explanatory Notes page 68).*

Source: Defra, netcen

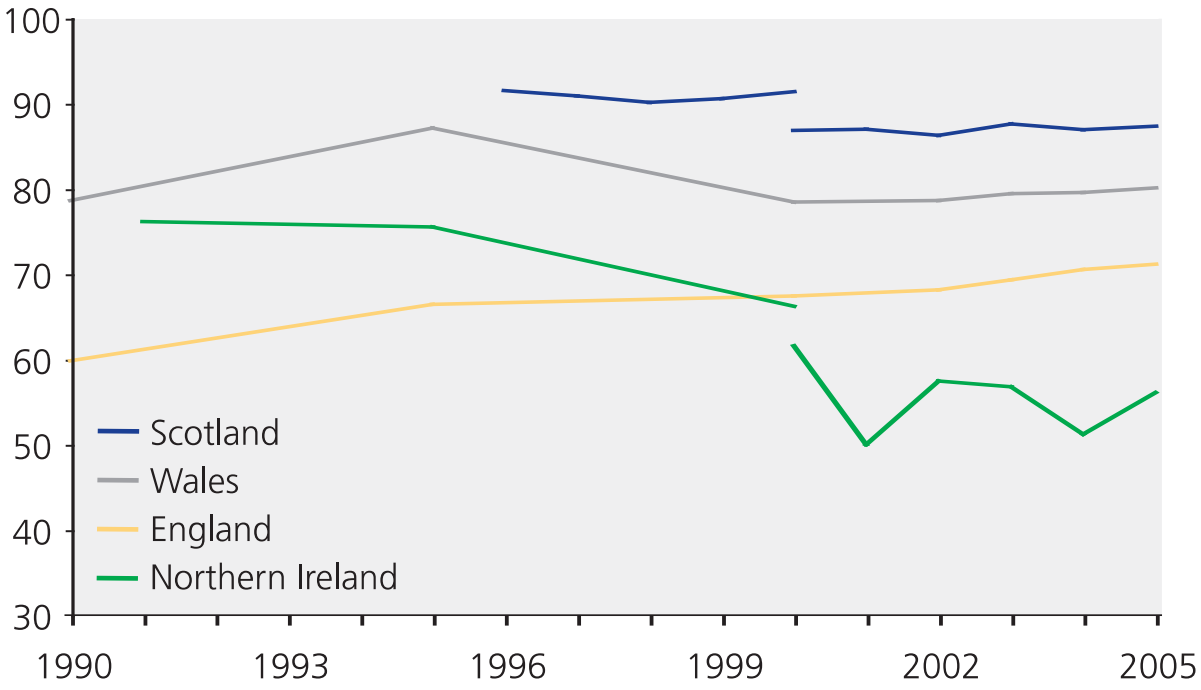
Further details: www.defra.gov.uk/environment/statistics/airqual/index.htm

Inland Water

Biological river water quality: 1990–2005

United Kingdom

Percentage of classified river length of good quality



	Percentage of rivers of good quality				
	1990	2000	2003	2004	2005
England	60	67	69	70	71
Wales	79	78	79	79	80
Northern Ireland	..	61	57	51	56
Scotland	..	87	88	87	87

In England 71 per cent of river length was of good biological quality in 2005 compared with 66 per cent in 1995 and 60 per cent in 1990. In Wales 80 per cent was of good quality in 2005 compared with 87 per cent in 1995 and 79 per cent in 1990. In Northern Ireland 56 per cent of monitored river length was of good biological quality in 2005, whilst in Scotland, 87 per cent of rivers were of good quality, based on a combined chemical, biological and aesthetic assessment, much the same as in the previous 5 years.

Note: the Northern Ireland network expanded significantly in 2000, and the Scotland network changed from 2000. (See also Explanatory Notes page 69).

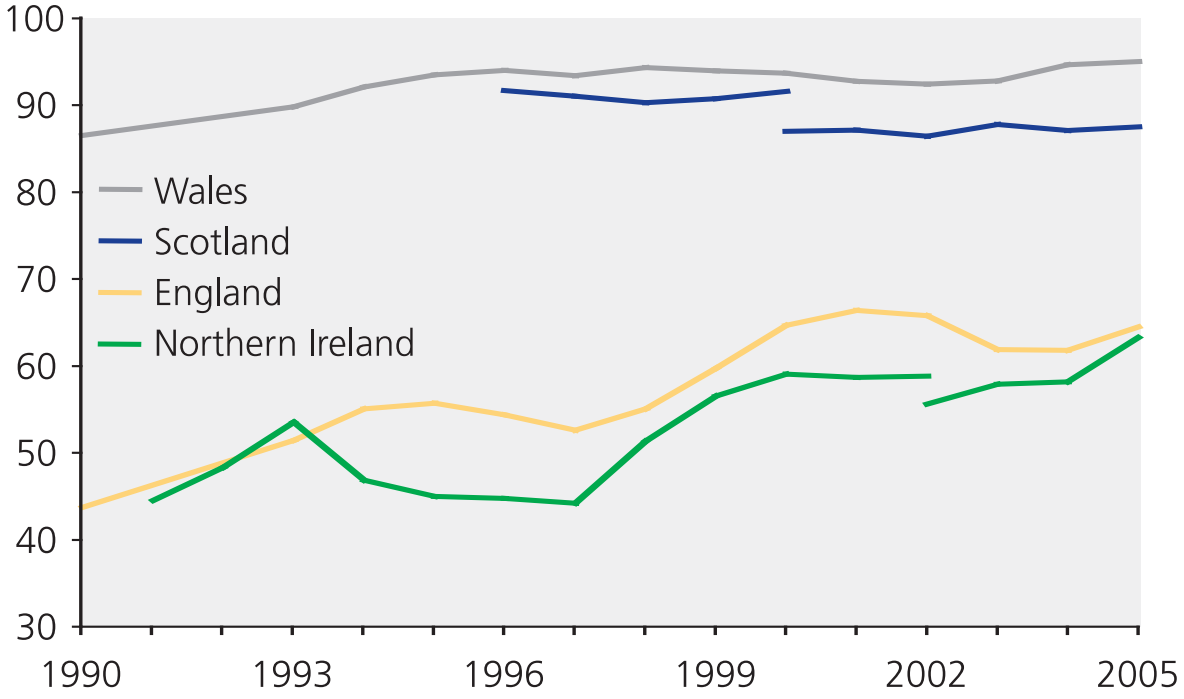
Source: Environment Agency, SEPA, Environment and Heritage Service

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Chemical river water quality: 1990–2005

United Kingdom

Percentage of classified river length of good quality



	Percentage of rivers of good quality				
	1990	2000	2003	2004	2005
England	43	64	62	62	64
Wales	86	93	93	94	95
Northern Ireland	..	..	58	58	63
Scotland	..	87	88	87	87

In England 64 per cent of monitored rivers were of good quality in 2005 compared with 54 per cent in 1996 and 43 per cent in 1990. In all years since 1993 over 90 per cent of rivers in Wales have been of good chemical quality. In Northern Ireland quality fell in the mid-1990s and then recovered. In Scotland, 87 per cent of rivers were of good quality in 2005, much the same as in every year since 2000, using the same assessment used for biological quality (p38).

Note: the Northern Ireland network expanded significantly in 2002 and the Scotland network changed from 2000.

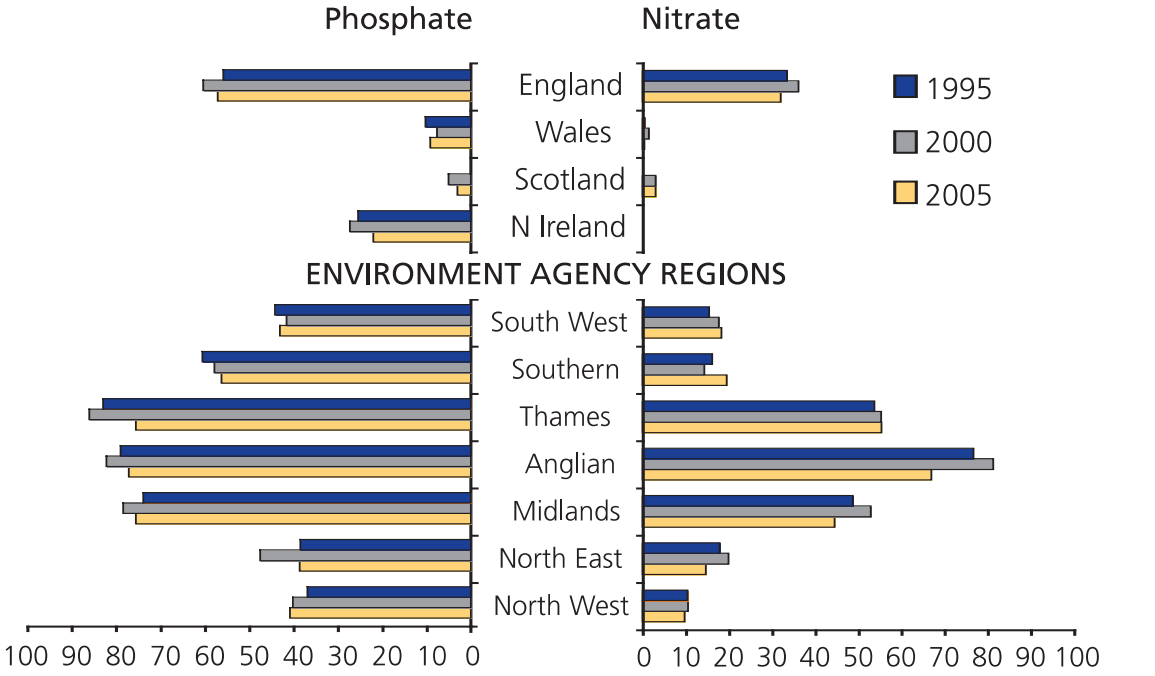
(See also Explanatory Notes page 69).

Source: Environment Agency, SEPA, Environment and Heritage Service

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Nitrate and phosphate concentrations in rivers: 1995–2005

United Kingdom



Percentage of river length with average concentrations of:

	phosphate greater than 0.1 mgP/l			nitrate greater than 30 $mgNO_3/l$		
	1995	2000	2005	1995	2000	2005
England	56	60	57	33	36	32
Wales	10	8	9	1	1	0
Scotland	..	5	3	..	3	3
N Ireland	25	27	22	0	0	0

Phosphorus and nitrogen are naturally found in water, and plants require these nutrients to grow. Elevated levels of phosphorus from sewage works, for example, can lead to eutrophication (excessive algal growth) in freshwater. High levels of nitrate are of concern in relation to drinking water abstractions and can lead to eutrophication in the sea. The highest concentrations of phosphate and nitrate are mainly in central and eastern England, reflecting the geology and higher population.

(See also Explanatory Notes page 69).

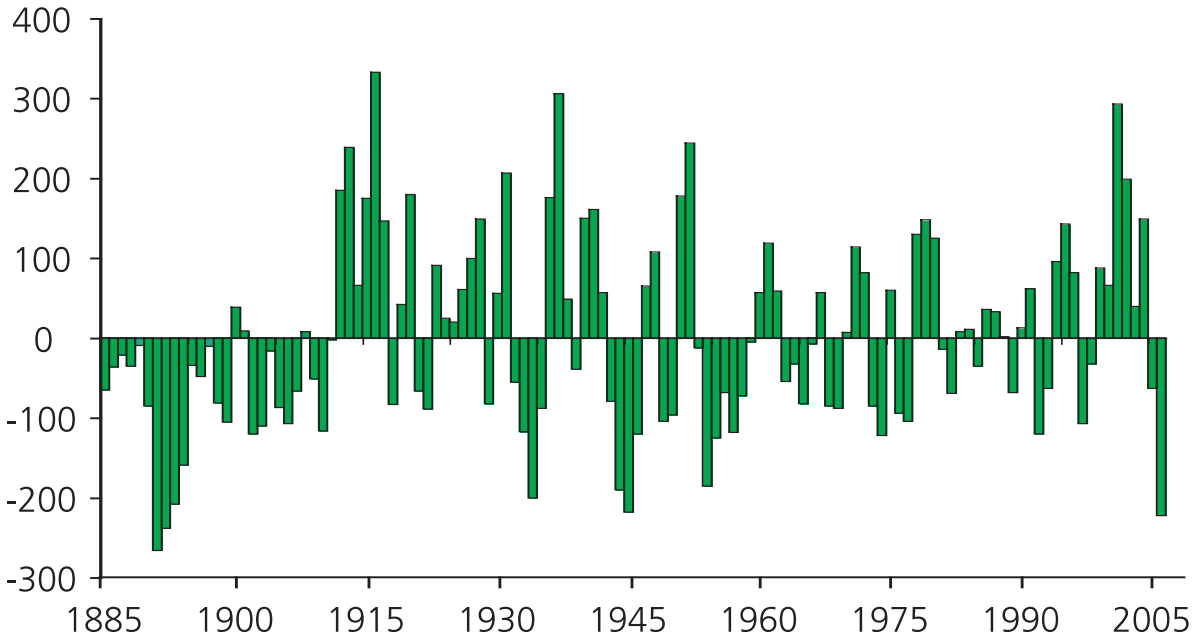
Source: Environment Agency, SEPA, Environment and Heritage Service

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Two year averages of Nov-April rainfall (compared to long term mean): 1885–2006

Thames catchment

Difference from 1885–2006 average (mm)



Two successive dry winter and early spring periods produced severe drought conditions across much of southern Britain by the summer of 2006. Drought conditions were most intense in parts of the South-East, where total rainfall over the last two November-April periods was the lowest since the 1890s.

As a result, groundwater levels were particularly low, triggering water use restrictions which affected 13 million consumers across southern England by the early summer. Significant environmental stress was also experienced due to low river flows and the temporary loss of aquatic habitat.

Source: CEH

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Inland Water

Abstractions for the public water supply from surface water and groundwater, by region: 2004

England and Wales

			Megalitres per day
2004	Surface	Groundwater	Total
England and Wales	12,289	4,918	17,207

Over 6 billion cubic metres of water – that is six billion tonnes – are abstracted for the public water supply in England and Wales each year. This is equivalent to over 17 billion litres per day.

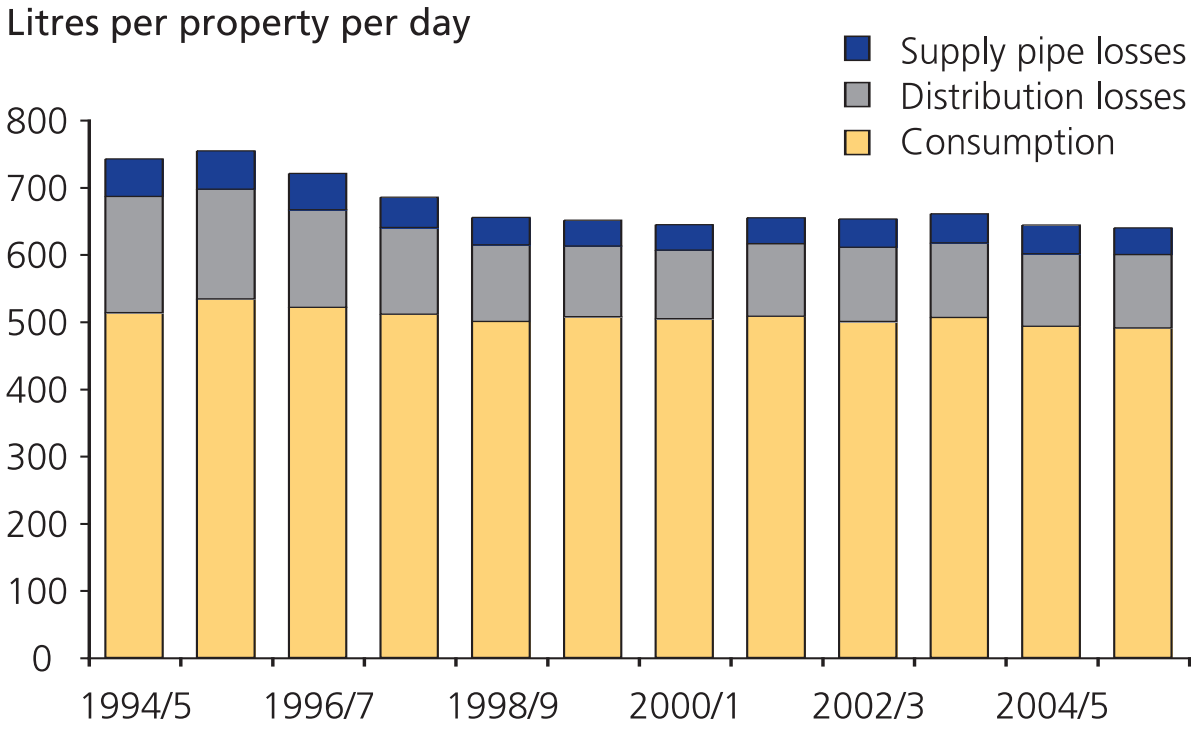
The public water supply does not depend only on reservoirs and surface waters. Three quarters of supplies in the southern region (roughly Kent, Surrey, Sussex and Hampshire) come from groundwaters, compared with one third in England as a whole, one tenth in the North West and two per cent in Wales.

Source: Environment Agency

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Water supply and leakage:1994/5–2005/6

England and Wales



Litres per property per day

	1994/5	1995/6	1999/2000	2005/6
Distribution losses	173	163	105	109
Supply pipe losses	56	57	38	40
Consumption	513	534	507	490
Total	742	754	650	639

In 2005/6, 3.6 billion litres per day of water put into the supply in England and Wales was lost through leakage, a decrease of 34 per cent since 1994/5, but little changed in the last four years, and more than 2000/1.

'Distribution losses' includes all losses of drinkable water between the treatment works and the highway boundary. 'Supply pipe losses' is leakage from customers' pipes between the highway boundary and the customers' stop taps. 'Consumption' here excludes all losses.

Source: Ofwat

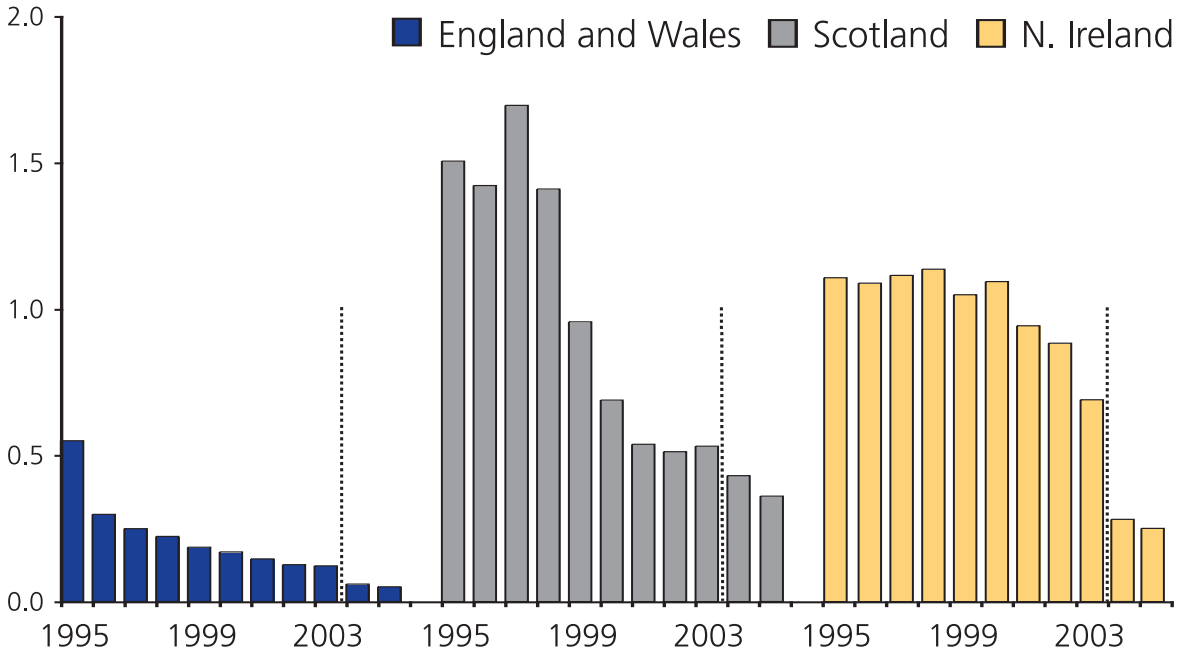
Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Inland Water

Drinking water quality:1995–2005

United Kingdom

Percentage of determinations exceeding standard



	Percentage exceeding (failing to meet) standards			
	1995	2000	2004	2005
England and Wales	0.55	0.17	0.06	0.05
Scotland	1.51	0.69	0.43	0.36
Northern Ireland	1.11	1.09	0.28	0.25

Water undertakers in the UK are required to supply wholesome water and to assess the quality of that water through regular sampling of water.

In 2005 in England and Wales over 2 million determinations were made and 0.05 per cent failed to meet the standards. In Scotland 345 thousand determinations were made and 0.36 per cent failed to meet the standards and In Northern Ireland 115 thousand determinations were made and 0.25 per cent failed to meet the standards.

Note: data from 2004 & 2005 are not comparable with previous years.

(See also Explanatory Notes page 70).

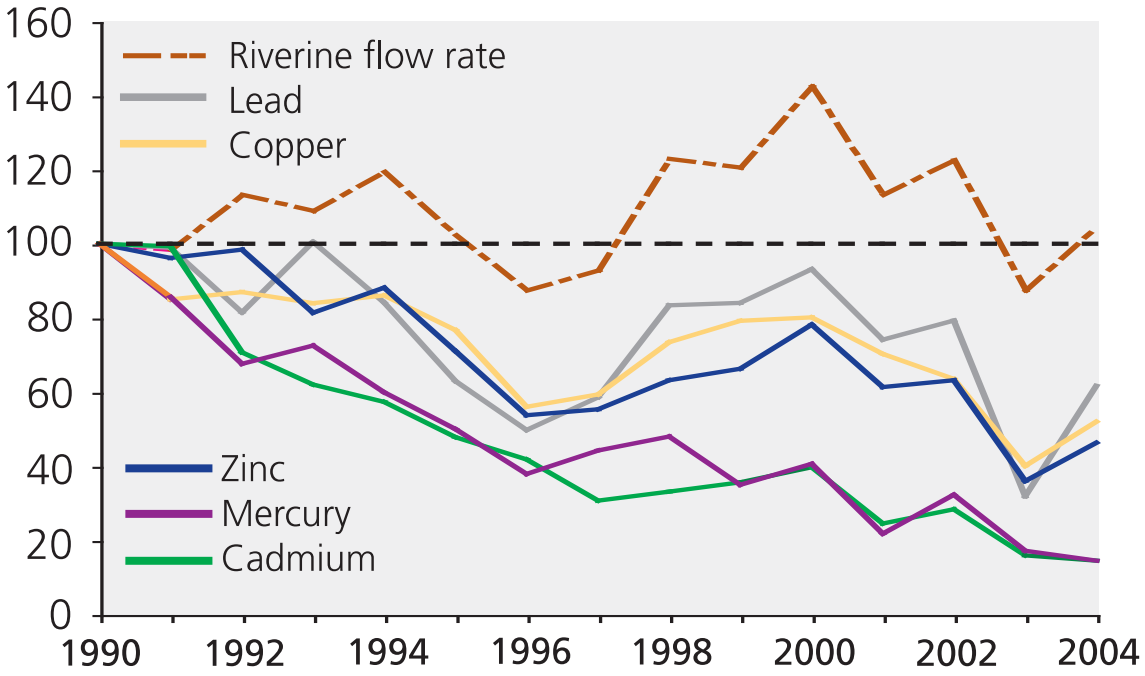
Source: DWI, Scottish Executive, DWI(NI)

Further details: www.defra.gov.uk/environment/statistics/inlwater/index.htm

Riverine and direct inputs of metals from the UK to marine waters around the UK: 1990–2004

United Kingdom

Index (1990=100)



Over the last decade there have been substantial reductions in most inputs of metals via rivers and direct discharges to estuaries and coastal waters. Since 1996, cadmium levels have fallen by almost two-thirds and mercury levels by 62 per cent and zinc levels have fallen by 14 per cent.

The apparent increase in inputs of some metals in the years from 1998 to 2002 and in 2004 compared to the previous years' trend is due to higher levels of riverine inputs that result from elevated riverine flows over this period.

This highlights the importance of looking at the patterns of change in inputs and riverine flow together, preferably over a long period rather than at year on year changes which can be misleading.

Note: based on upper estimates

(See also Explanatory Notes page 70).

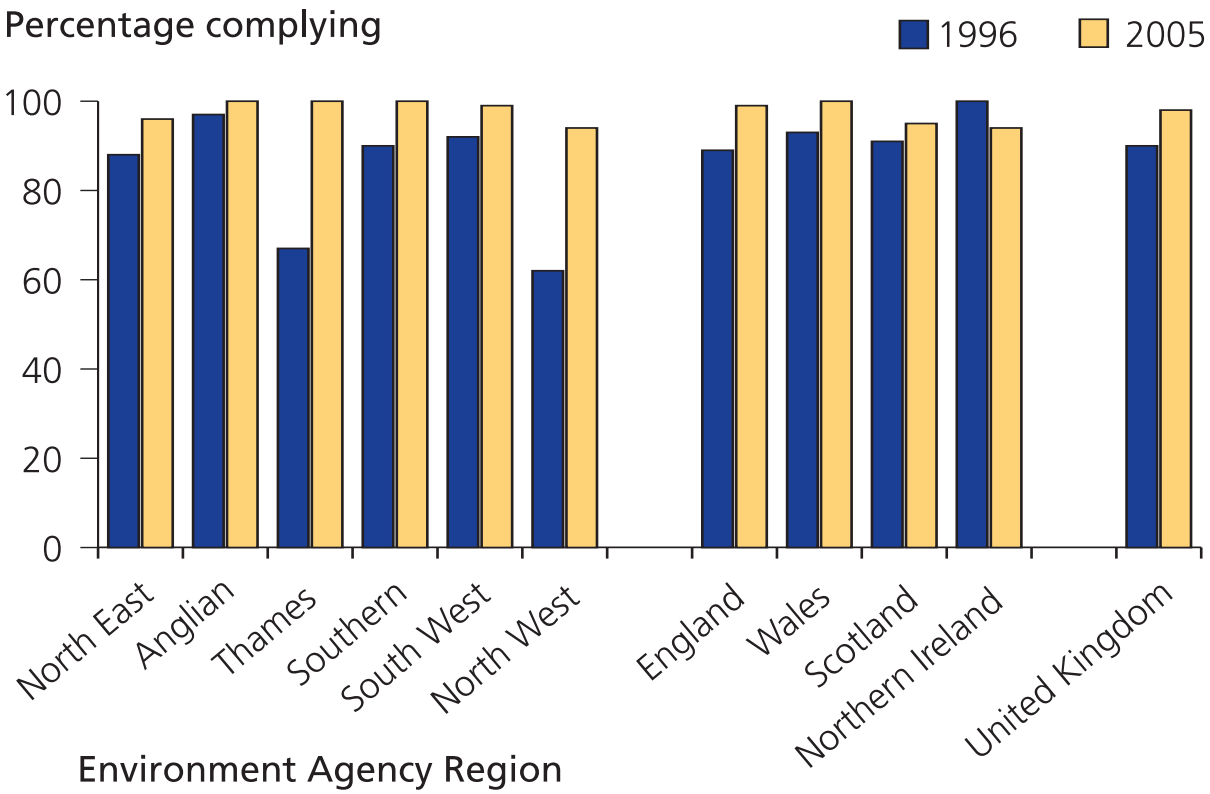
Source: Defra, Environment Agency, SEPA, DRD(NI)

Further details www.defra.gov.uk/environment/statistics/coastwaters/index.htm

Coastal and Marine Waters

Compliance with mandatory bathing water standards: 1996 and 2005

United Kingdom



	Percentage of coastal waters meeting mandatory standard				
	England	Wales	Scotland	N Ireland	UK
1996	89	93	91	100	90
2005	99	100	95	94	99

In 2005, 98 per cent of coastal bathing waters in the UK reached mandatory standards of the European Bathing Water Directive compared with 90 per cent in 1996.

Bathing water quality improved in Wales, Scotland and all regions of England; the biggest improvements being in Thames region which improved from two-thirds to all waters complying and the North West which improved from 62 to 94 per cent compliance.

(See also Explanatory Notes page 70).

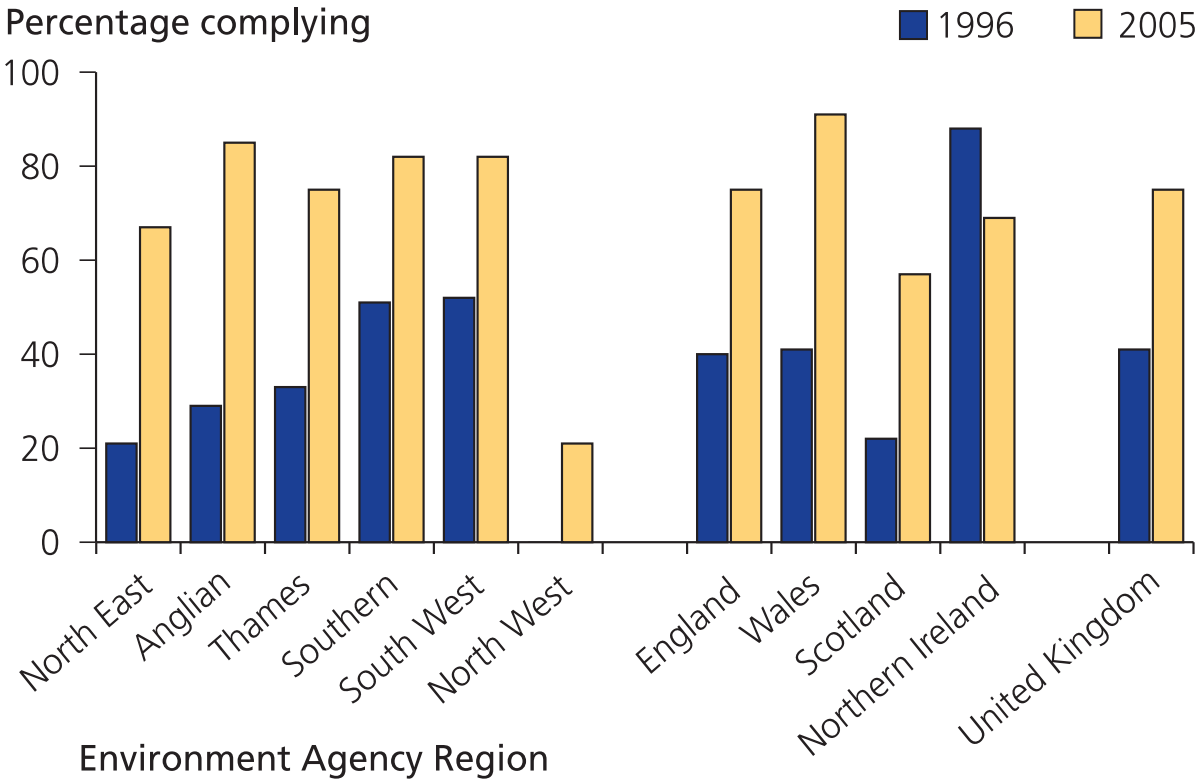
Source: Environment Agency, SEPA, Environment and Heritage Service

Further details www.defra.gov.uk/environment/statistics/coastwaters/index.htm

Coastal and Marine Waters

Compliance with guideline bathing water standards: 1996 and 2005

United Kingdom



	Percentage of coastal waters meeting guideline standard				
	England	Wales	Scotland	N Ireland	UK
1996	40	41	22	88	41
2005	75	91	57	69	75

Compliance with the more stringent guideline standard (one of the requirements for "Blue Flag" status) increased to 75 per cent in 2005 of UK bathing waters compared with 41 per cent in 1996.

The number of UK waters reaching guideline standards more than doubled from 194 out of 472 designated coastal bathing waters in 1996 to 420 out of 559 in 2005.

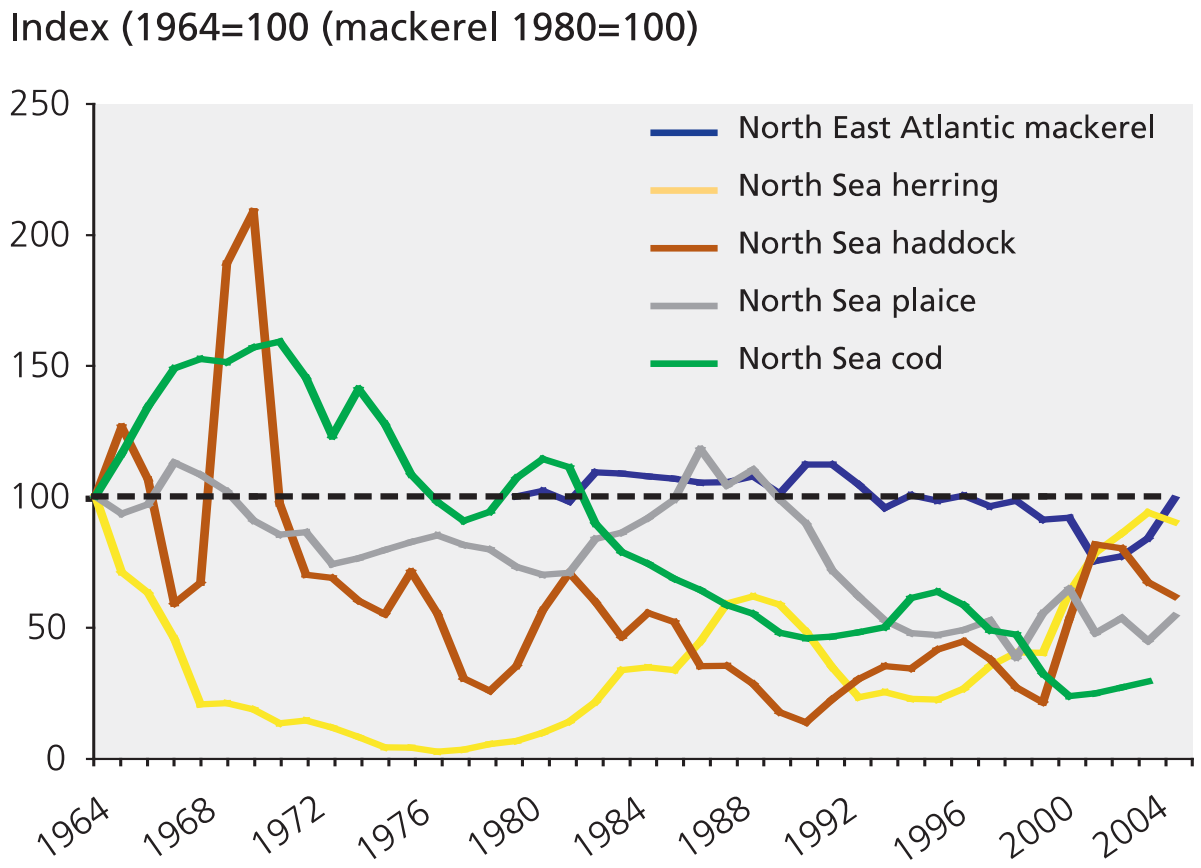
(See also Explanatory Notes page 70).

Source: Environment Agency, SEPA, Environment and Heritage Service

Further details www.defra.gov.uk/environment/statistics/coastwaters/index.htm

North Sea fish stocks and stocks of North East Atlantic mackerel: 1964–2005

United Kingdom



Fish stocks can fluctuate substantially over relatively short periods. Most stocks are over-exploited and some stocks are at historically low levels, especially North Sea cod. The North Sea herring population was seriously affected by over-fishing in the 1970s and the fishery was closed between 1978 and 1982, allowing stocks to recover.

Since 1996 North Sea herring, haddock and plaice have shown the most improvement, increasing by over 300 per cent, by nearly 50 per cent and by 15 per cent respectively.

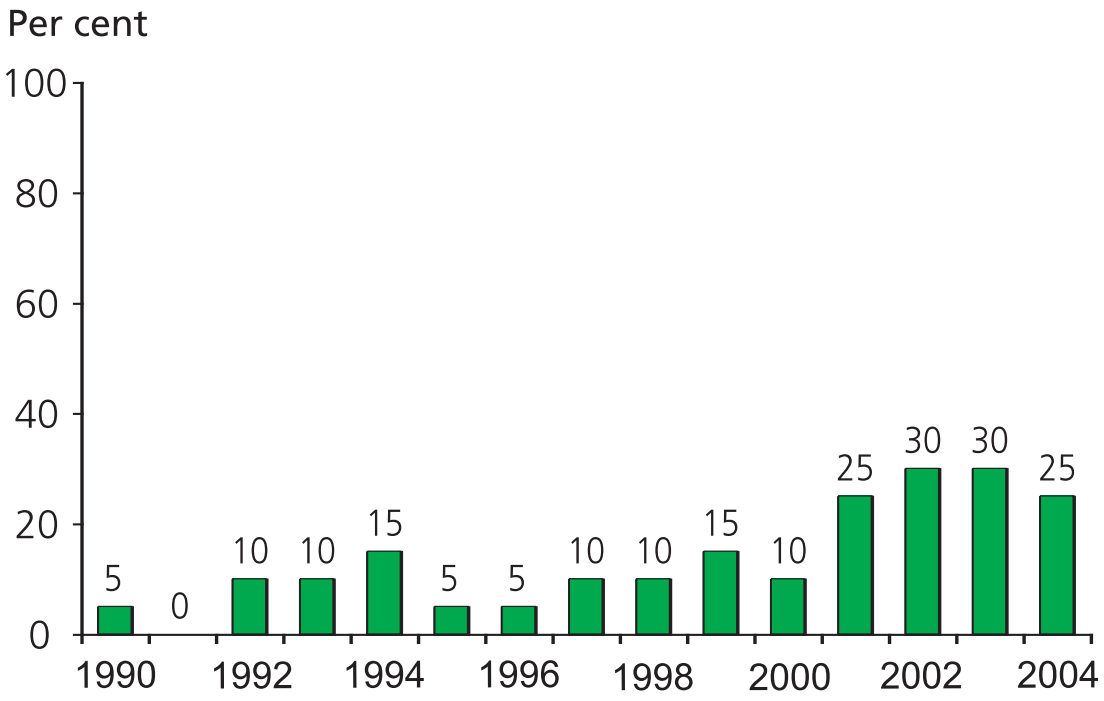
North East Atlantic mackerel remains at similar levels to 1996 stocks, whilst North Sea cod has fallen by over 50 per cent between 1996 and 2004.

Source: ICES, CEFAS

Further details www.defra.gov.uk/environment/statistics/coastwaters/index.htm

Fish stocks around the UK at full reproductive capacity and harvested sustainability: 1990–2004

United Kingdom



In 2004 25 per cent of fish stocks around the UK were at full reproductive capacity and were being harvested sustainably. These stocks had spawning levels which were sufficient to allow a good probability of stock replenishment.

Since 2001, 25 to 30 of fish stocks around the UK have been at full reproductive capacity and being harvested sustainably, compared to 5 per cent in 1990 and 15 per cent or less in the years from 1990 to 2000.

This means that 70 per cent or more of UK fish stocks have suffered reduced reproductive capacity and have been harvested unsustainably since 1990. For many of these stocks the ICES scientific advice is that the fishing rate should be reduced substantially in order to permit the stocks to recover.

Note: figures relate to finfish stocks only (Data are only available for 20 out of a total of 47 stocks).

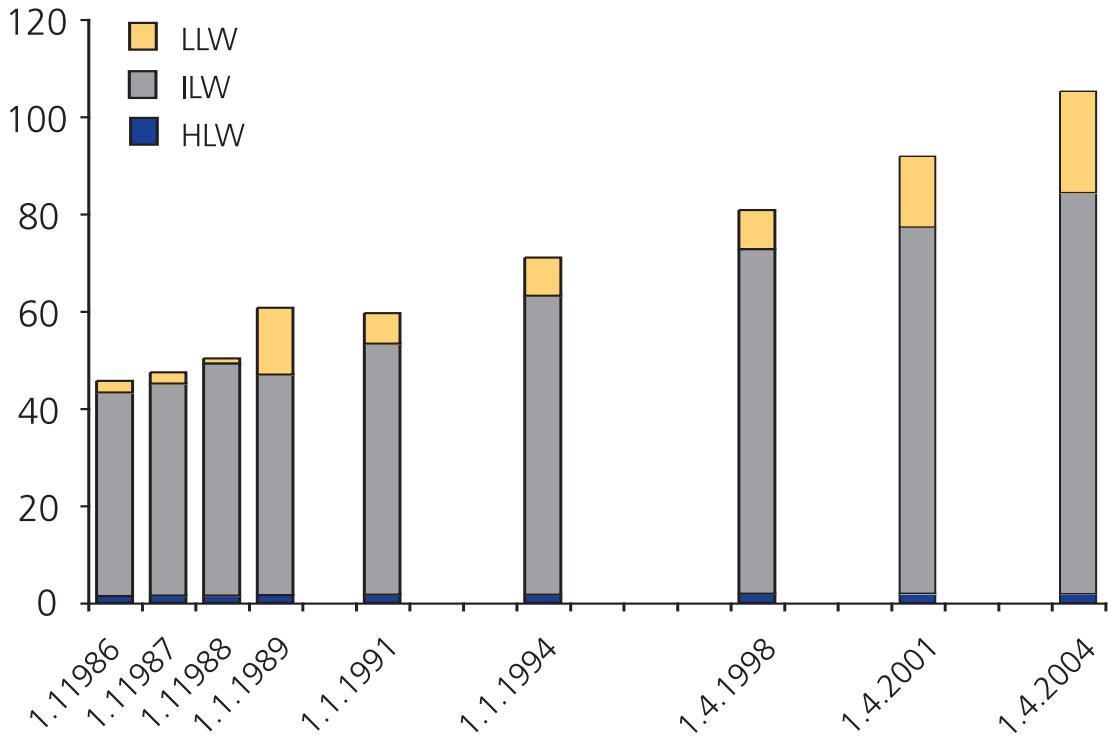
Source: ICES, CEFAS

Further details www.defra.gov.uk/environment/statistics/coastwaters/index.htm

Radioactive waste stocks: 1986–2004

Great Britain

Thousand cubic metres



Cubic metres

Type of waste	1986	1994	1998	2001	2004
Low level (LLW)	2,430	7,880	7,980	14,580	20,850
Intermediate level (ILW)	41,890	61,490	70,950	75,300	82,460
High level (HLW)	1,350	1,640	1,800	1,960	1,890

High level waste results from the reprocessing of nuclear fuel, and is highly radioactive. It exists mainly as a liquid before being turned into glass and stored. Stocks increased by 40 per cent between 1986 and 2004.

Intermediate level waste includes, for example, nuclear reactor components and the irradiated metal cladding for nuclear reactor fuel. Stocks of ILW almost doubled between 1986 and 2004. There is presently no disposal route for these two types of waste and they have to be stored.

Low level waste includes items such as paper, plastics, soil and worn out nuclear workers' clothing, which is stored for short periods until disposed of in special facilities.

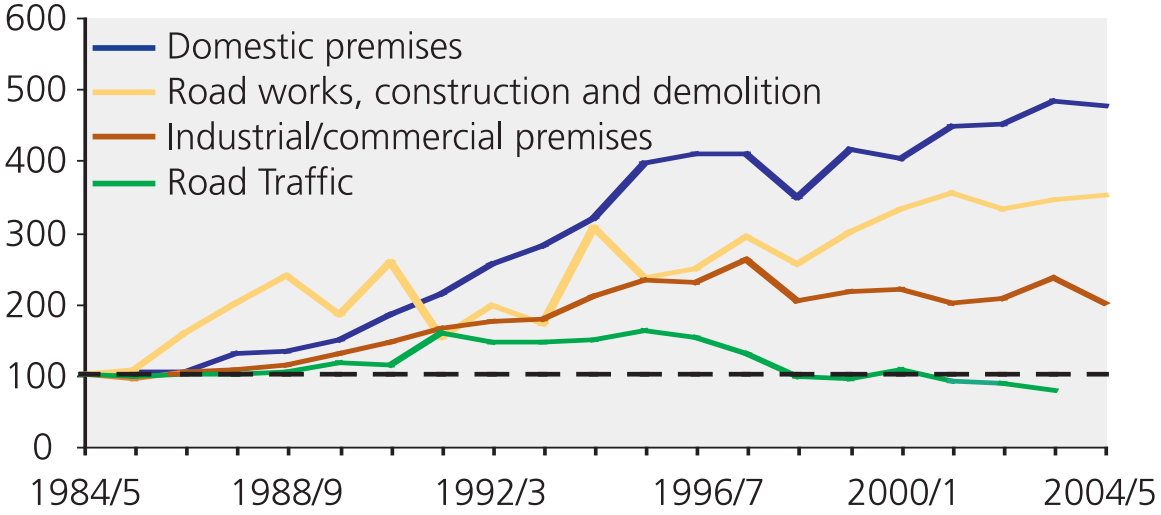
Source: Electrowatt Ekono (UK) Ltd

Further details: www.defra.gov.uk/environment/statistics/radioact/index.htm

Noise complaints received by Environmental Health Officers: 1984/5–2004/5

England and Wales

Index 1984/5 = 100



	Number per million people			
	1984/5	1990/1	1995/6	2004/5
Domestic Premises	1,244	2,264	4,895	5,903
Road works and construction	98	252	229	343
Industrial/Commercial premises	636	913	1,466	1,260
Road traffic	41	46	66	..
Aircraft	15	34	48	..

Although noise complaints are increasing, this does not necessarily mean that there has been an increase in actual noise levels.

Domestic premises are the largest cause of complaints about noise, accounting for around three quarters of all complaints in recent years. Between 1984/5 and 2004/5, complaints about noise from this source increased almost five times. Complaints about roadworks and construction noise were 3 times greater in 2004/5 than 1984/5, while complaints about noise from industrial and commercial premises doubled in the same period. Complaints about road traffic rose until 1997/8, but there have been fewer than in 1984/5 in most years since then.

(See also Explanatory Notes page 71).

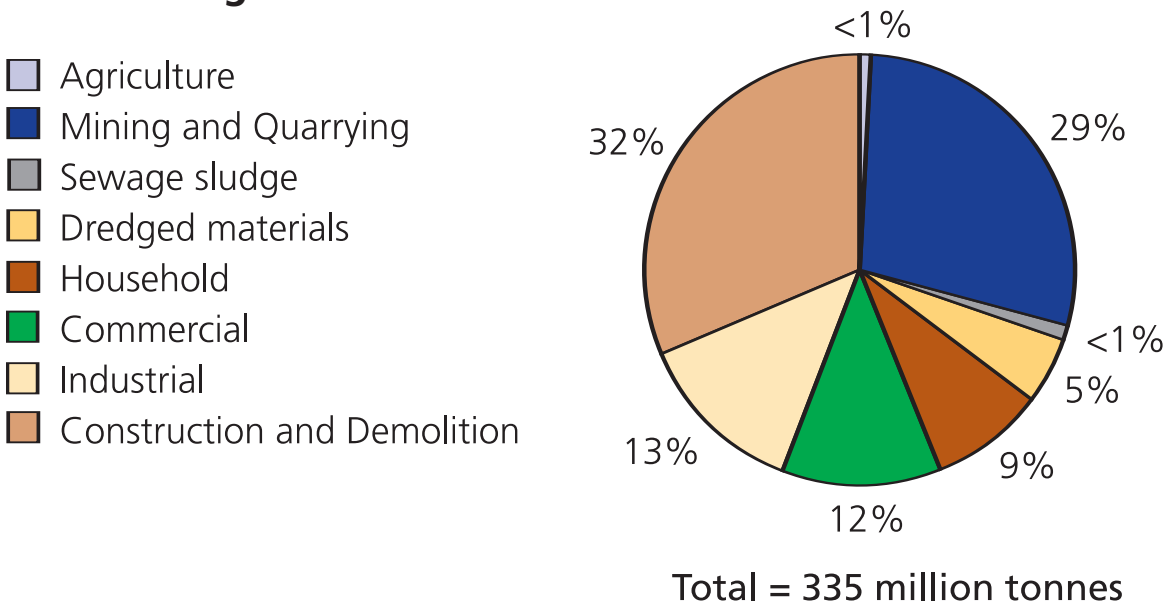
Source: CIEH

Further details: www.defra.gov.uk/environment/statistics/noise/index.htm

Waste and Recycling

Estimated total annual waste arisings, by sector

United Kingdom



Total = 335 million tonnes

In 2004 the UK produced about 335 million tonnes of waste. The chart above shows the estimated proportion produced by each sector.

This includes nearly 100 million tonnes of minerals waste from mining and quarrying, which is not currently subject to control under the EU Waste Framework Directive.

It also includes around 220 million tonnes of controlled wastes from households, commerce and industry (including construction and demolition wastes). Household wastes represent about 9 per cent of total arisings. Waste from the agriculture sector represents less than 1 per cent of total arisings. This waste excludes manure or straw and will come under the same legislative controls as other wastes in 2006.

(See also Explanatory Notes page 71).

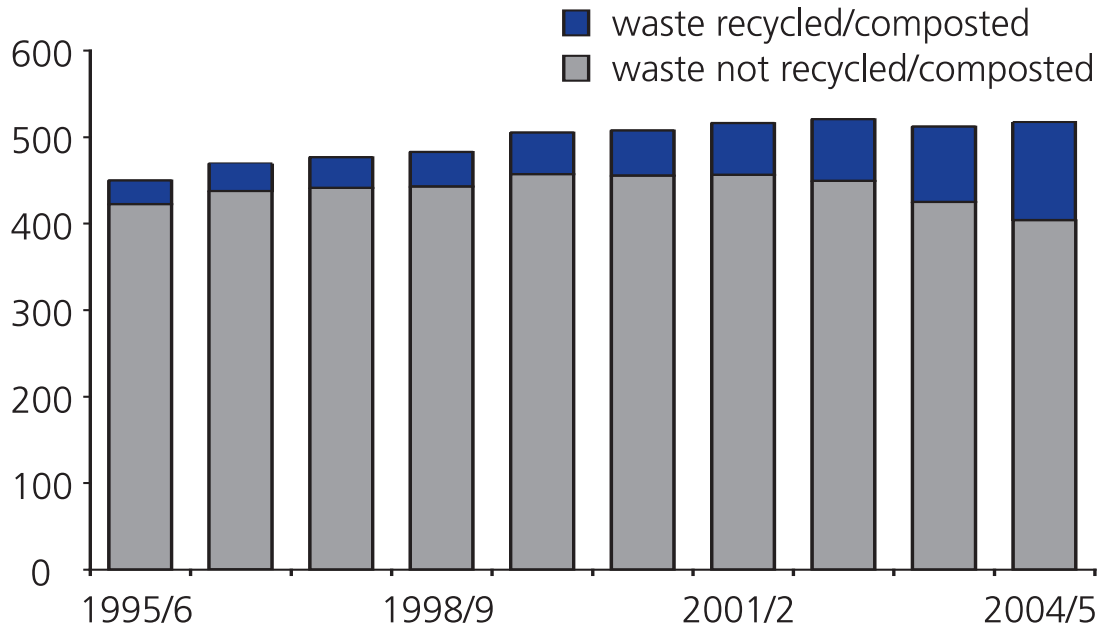
Source: Defra, Environment Agency, Water UK

Further details: www.defra.gov.uk/environment/statistics/waste/index.htm

Household waste and recycling: 1995/6–2004/5

United Kingdom

Kilograms per person per year



Kilograms per person per year

	1995/6	2000/1	2002/3	2003/4	2004/5
Waste not recycled	423	455	449	425	404
Waste recycled/composted	27	52	71	87	113
Total waste	450	507	521	512	517

Between 1995/6 and 2004/5 in the UK household waste per person increased by 15 per cent. Each person generates just over half a tonne of household waste per year on average.

The amount of household waste recycled or composted more than quadrupled between 1995/6 and 2004/5.

The amount of waste per person not recycled – most of which goes to landfill – has decreased in the last three years and in 2004/5 was lower than any year since 1983/4, when estimates were first made.

Household waste includes household bin waste and also waste from civic amenity sites, other household collections and recycling sites.

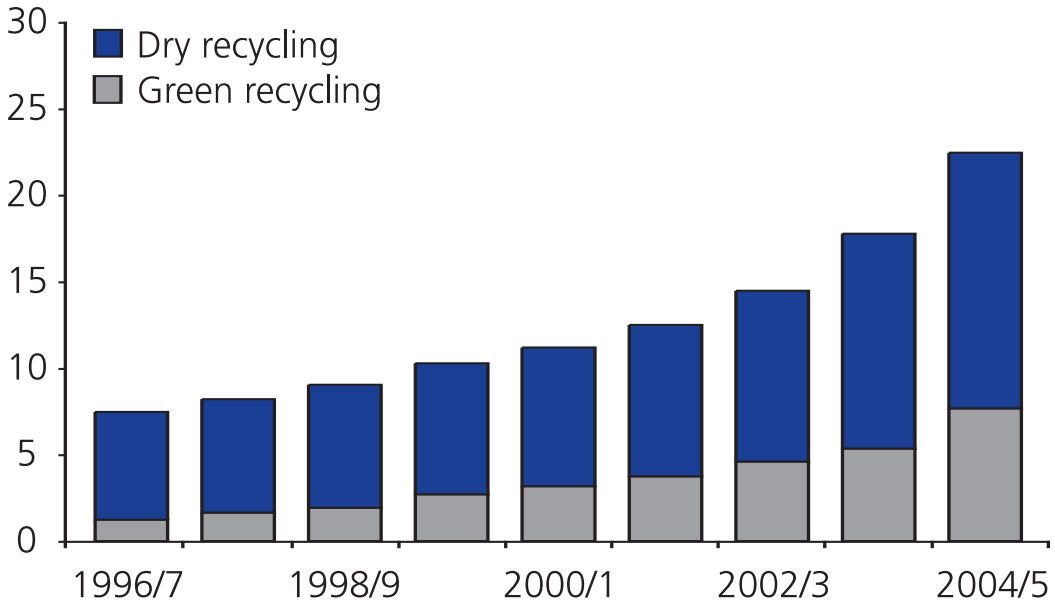
(See also Explanatory Notes page 71).

Source: Defra

Further details: www.defra.gov.uk/environment/statistics/waste/index.htm

Green and dry recycling rates for household waste: 1996/7–2004/5

England



25.7 million tonnes of household waste was collected in England in 2004/5 and 22½ per cent of this waste was recycled or composted. This has increased from 7½ per cent in 1996/7 and compares with a target, set in Waste Strategy 2000, to recycle/compost 25 per cent of household waste by 2005/6.

Green recycling (composting) increased from 1 per cent in 1996/7 to 8 per cent in 2004/5 and recycling of other materials (dry recycling) increased from 6 per cent to 15 per cent in the same period.

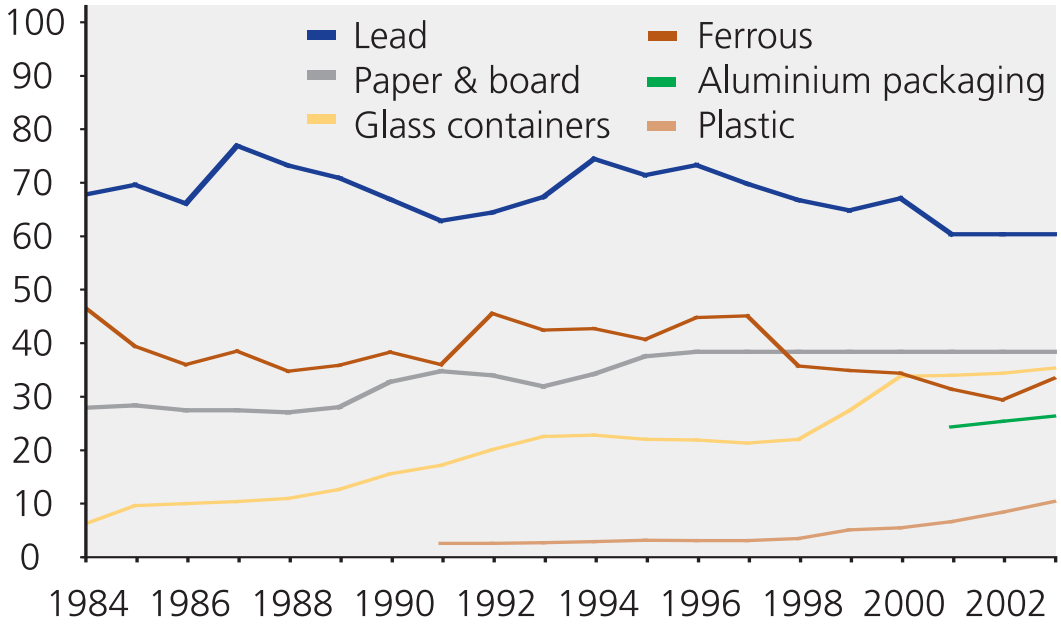
Source: Defra, Valpack

Further details: www.defra.gov.uk/environment/statistics/waste/index.htm

Recycling of various materials: 1984–2003

United Kingdom

Percentage recycling rate



A greater proportion of lead consumed has been recycled than other materials. In 2003 60 per cent of lead was recycled compared with about two-thirds in 1984 and three-quarters in the mid-1990s.

Around 38 per cent of paper and board was recycled in 2003 much the same as in each year since 1995. Around a third of ferrous metal was recycled in 2003. Just over a third of glass containers were recycled, a steady increase from 6 per cent in 1984 and 22 per cent in the mid-1990s.

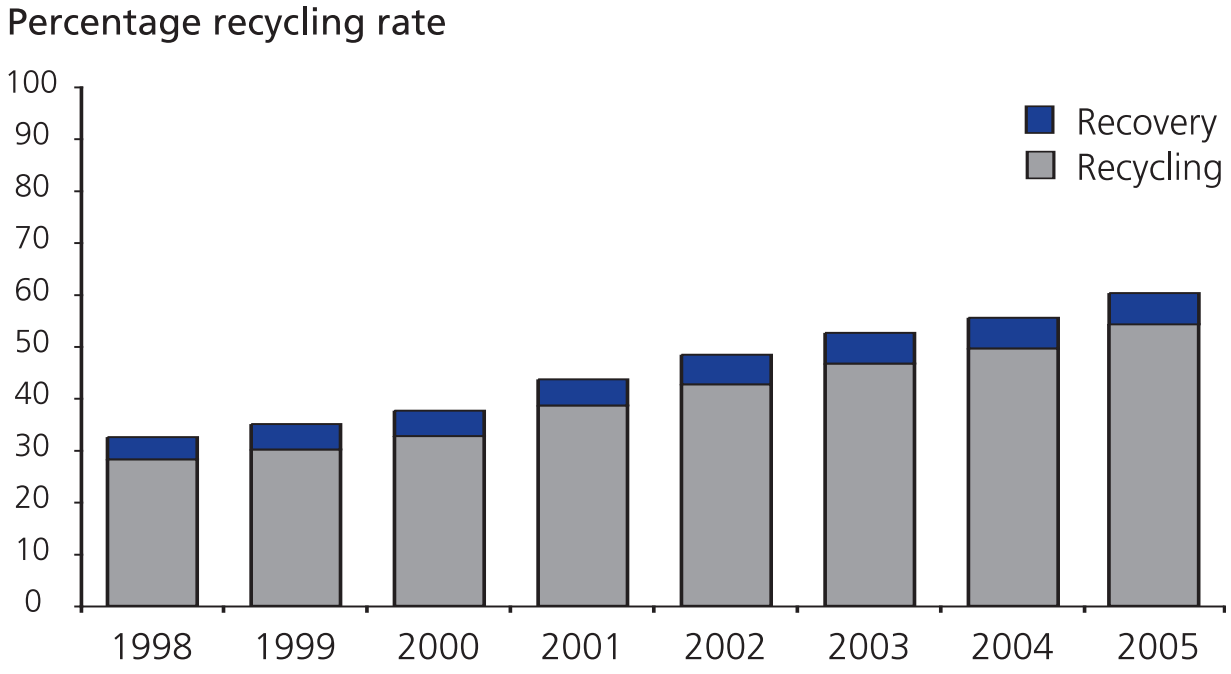
The recycling rate for plastics has also increased from 2 per cent to around 10 per cent in 2003.

Source: Defra, World Bureau of Metal Statistics, British Paper & Board Industry Federation, Corus, Alupro, British Glass Federation, British Plastics Federation

Further details: www.defra.gov.uk/environment/statistics/waste/index.htm

Recycling and recovery from packaging: 1998–2005

United Kingdom



Million tonnes

	1998	2000	2003	2004	2005
Total packaging waste	10.2	9.2	10.1	10.2	10.4

The amount of packaging entering the waste stream is estimated to have been around 10 million tonnes in recent years. Just over half of this comes from the commercial and industrial waste stream and the remainder from household waste.

The packaging waste stream is made up of various materials including paper (36 per cent), glass (33 per cent), plastics (18 per cent), wood (14 per cent), steel (7 per cent) and aluminium (1 per cent).

The recycling/recovery rate of packaging waste almost doubled from 33 per cent in 1998 to 60 per cent in 2004.

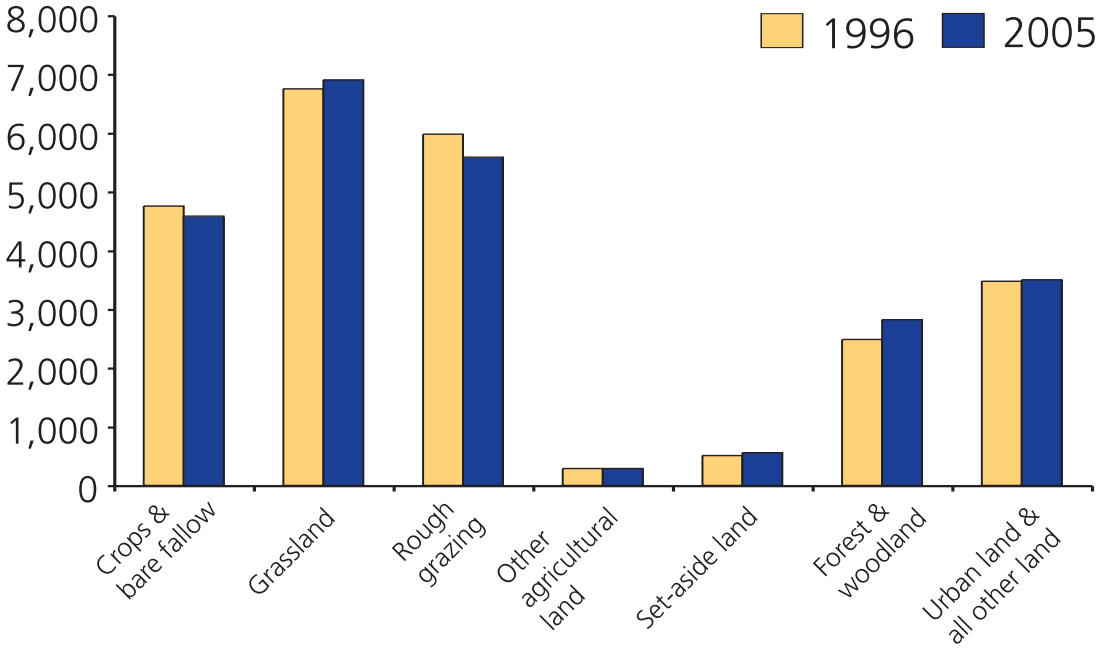
Source: Defra

Further details: www.defra.gov.uk/environment/statistics/waste/index.htm

Agricultural and other land use: 1996–2005

United Kingdom

Thousand hectares



Total land area = 24 million hectares

Thousand hectares

	Crops	Grass	Grazing	Other agricultural	Set-aside	Forest	Urban & other
1996	4,759	6,749	5,983	285	509	2,486	3,474
2005	4,583	6,904	5,590	289	559	2,825	3,501

Land use refers to the main activity taking place on an area of land.

Around three-quarters of the total UK land area is under agricultural uses.

Between 1996 and 2005, the total area of agricultural land fell by 2 per cent. The area under crops fell by 4 per cent in the same period, and rough grazing land decreased by 7 per cent. The area of set-aside land rose by 10 per cent, grassland increased by 2 per cent and urban and other land was much the same in 2005 as in 1996.

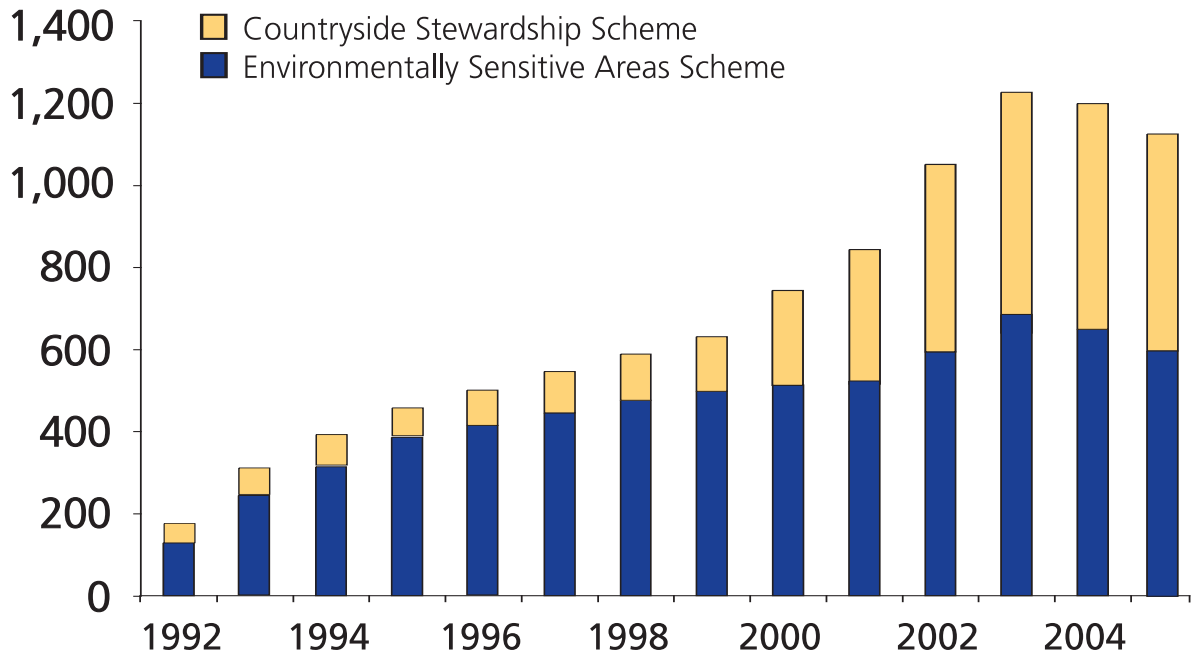
Source: Defra

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

Agri-environment schemes:1992–2005

England

Thousand hectares



Thousand hectares

	1992	1996	2000	2003	2004	2005
ESAs	129	434	550	677	643	597
CSS	46	95	259	534	527	511
Entry Level	..	..	..	..	..	1,354

In 2005 the total area of land in agri-environment schemes was nearly 5 times greater than in 1996. Nearly 2.5 million hectares of land in England are managed through these schemes, over 13 per cent of the total agricultural area in England.

The Environmentally Sensitive Areas (ESA) scheme, was introduced in England in 1987 and covers 22 areas designated for their unique environmental features. The Countryside Stewardship Scheme (CSS) was introduced in 1991 and applies outside ESAs.

The Entry Level scheme was rolled out across in England in 2005 and requires implementation of simple and effective farm management. Land in this scheme is not necessarily additive to that in the ESA and the CS schemes. *(See also Explanatory Notes page 71).*

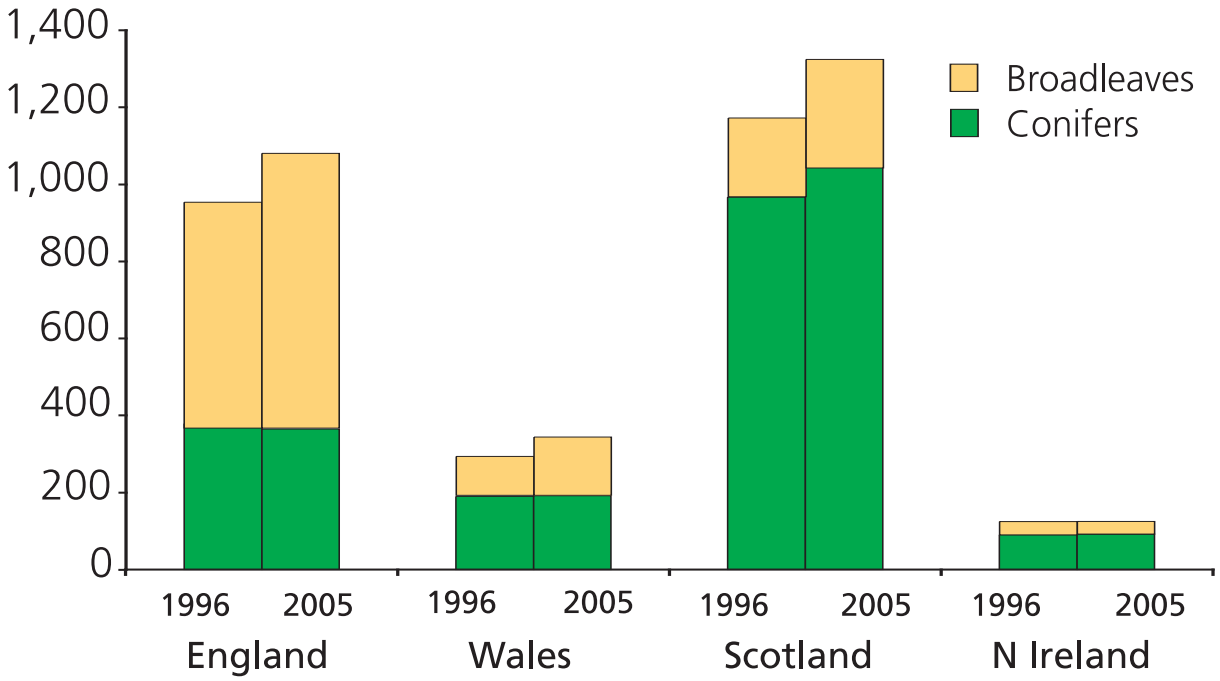
Source: Defra

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

Area of woodland: 1996–2005

United Kingdom

Thousand hectares



Thousand hectares

	Broadleaves		Conifers	
	1996	2005	1996	2005
England	602	750	380	370
Wales	81	125	166	161
Scotland	202	284	974	1,050
N Ireland	16	19	65	61
UK Total	901	1,178	1, 585	1,642

Between 1996 and 2005 the area of woodland in the UK increased by almost 15 per cent, with the area covered by conifers increasing by 4 per cent and the area covered by broadleaves increasing by 31 per cent.

Approximately 5 per cent of the UK was covered by woodland in 1924; in 2005 almost 12 per cent of the UK was wooded.

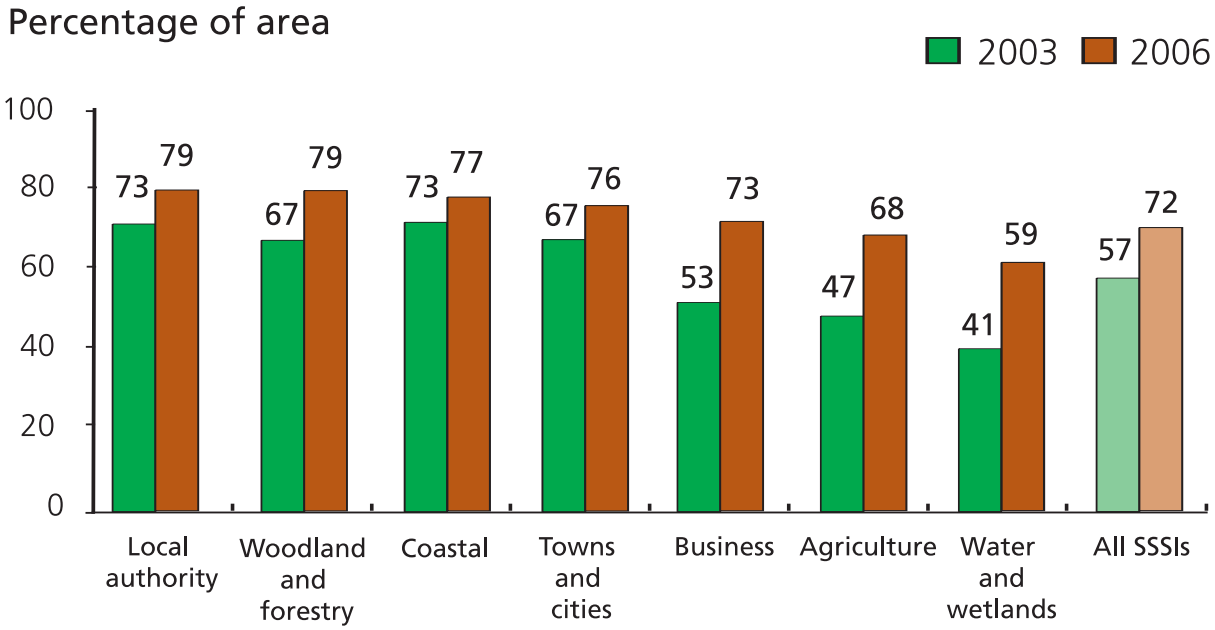
In 2005, woodland covered 17 per cent of Scotland, 14 per cent of Wales, 9 per cent of England and 6 per cent of Northern Ireland.

Source: Forestry Commission, DARDNI

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

SSSI habitats in favourable or recovering condition by sector: 2003–2006

England



As at 31 March 2006 72 per cent of the Sites of Special Scientific Interest (SSSIs) in England were in a favourable or recovering condition. There are over 4,000 sites covering around 1 million hectares, around 8 per cent of the total land area of England.

Over three quarters of the area of sites within local authority management or in coastal, woodland or urban areas were in a favourable or recovering condition compared with nearly 60 per cent of the area of water and wetland sites and two thirds of those on farmland.

A greater proportion of sites in all sectors were in a favourable or recovering condition in 2006 than at the baseline assessment of SSSIs, completed in March 2003.

The Government has a Public Service Agreement target to bring 95 per cent of nationally important wildlife sites into favourable condition by 2010.

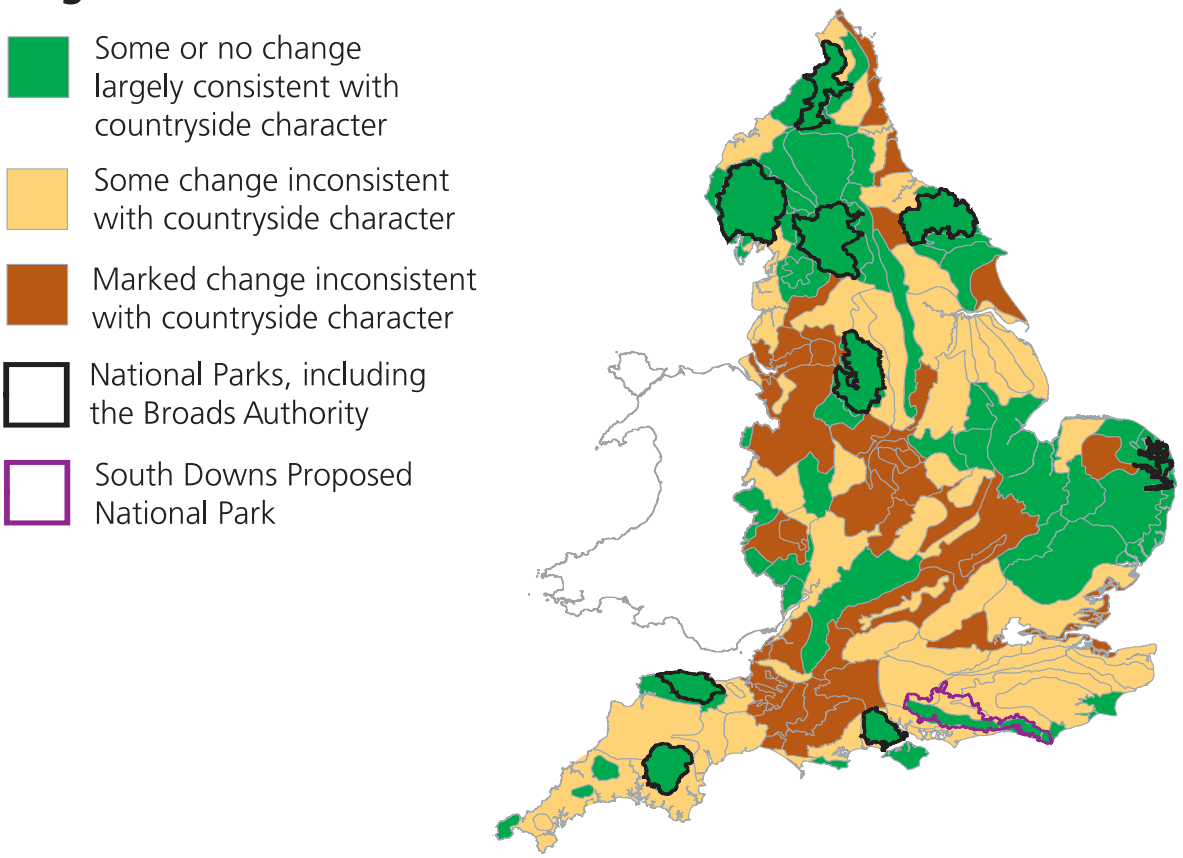
(See also Explanatory Notes page 71).

Source: English Nature

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

Change in countryside character: 1990–1998

England



The map shows changes to the landscape and the effect they have had on the character of the countryside between 1990 and 1998. Change in landscape quality was assessed in relation to woodland, boundary features, agriculture, settlement and development, semi-natural habitats, historic features, and river and coastal elements occurring within the Joint Character Areas of England over the period 1990 to 1998.

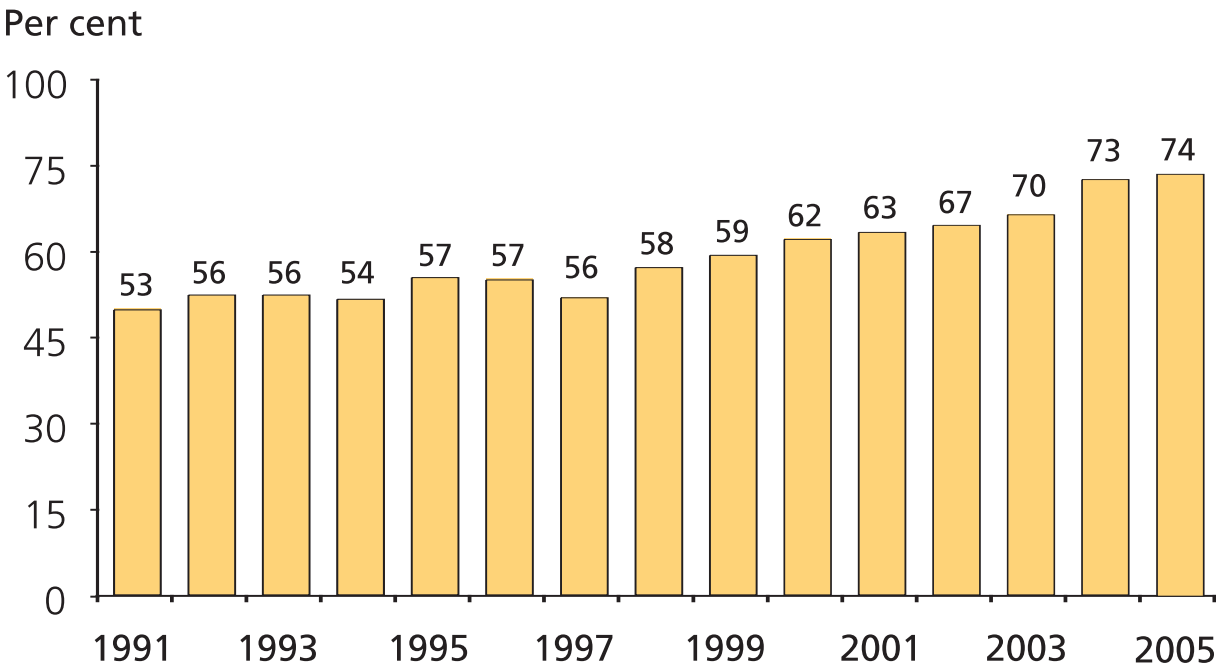
Between 1990 and 1998, 40 per cent of landscapes were either stable or showed changes in elements that were consistent with existing character area descriptions. Over the same period the changes were marked and inconsistent with the character of the area for 23 per cent of landscapes, and for 37 per cent the changes were inconsistent with the character of the area but of less significance for overall character.

Source: Countryside Agency

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

New homes built on previously developed land: 1991–2005

England



Since 1996, there has been an increase of 17 percentage points in new homes built on previously developed – "brownfield" – land in England.

Provisional figures for 2005 indicate that almost three quarters of new homes were built on previously developed land. The Government has set a target of 60 per cent to be achieved by 2008 (these figures include conversions of existing buildings, which are estimated to add about 3 percentage points to the national figure).

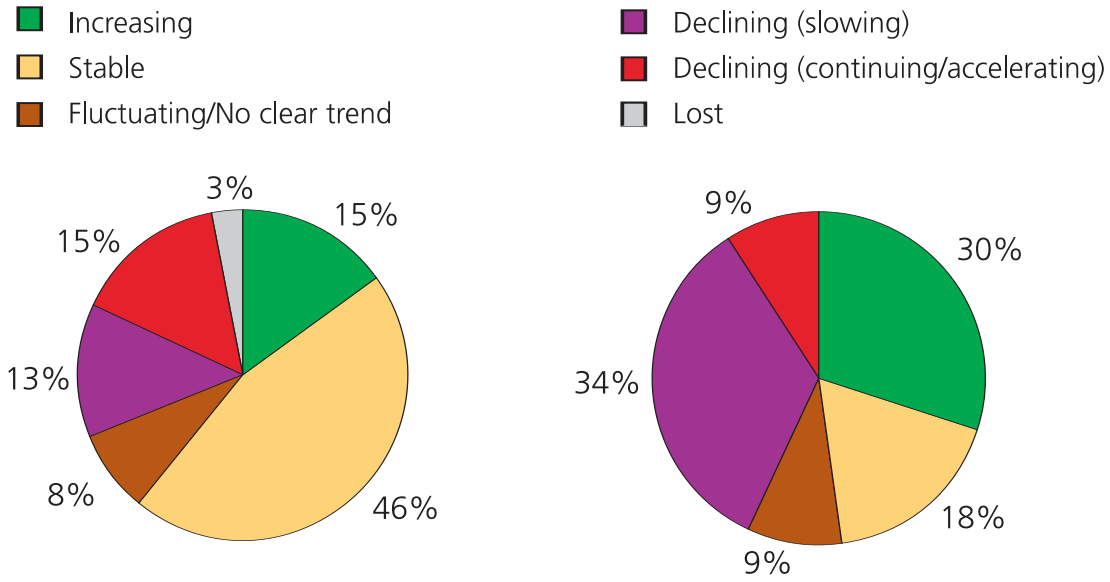
The percentage is much higher in urban areas and there is also considerable regional variation. Over the period from 2000 to 2005, London had the highest rate of generally over 90 per cent (excluding conversions) and the East Midlands and the South West had the lowest rates, both at around 50 per cent.

Source: DCLG

Further details: www.defra.gov.uk/environment/statistics/land/index.htm

Status of priority species and habitats in the UK: 2005

United Kingdom



Total number of species (with known status) = 288

Total number of habitats (with known status) = 33

Priority species and habitats are those that have been identified as being the most threatened and requiring action under the UK Biodiversity Action Plan (BAP).

Of the 288 assessed species for which the status was known in 2005, 61 per cent were increasing or stable. Of the 33 assessed habitats for which the status was known in 2005, 49 per cent were increasing or stable.

The status of 202 species and 19 habitats was known in both 2002 and 2005. Of these species, 35 per cent were declining or lost in 2005 compared with 43 per cent in 2002; and 8 of the habitats were declining or lost in 2005 compared with 9 in 2002.

(See also Explanatory Notes page 72).

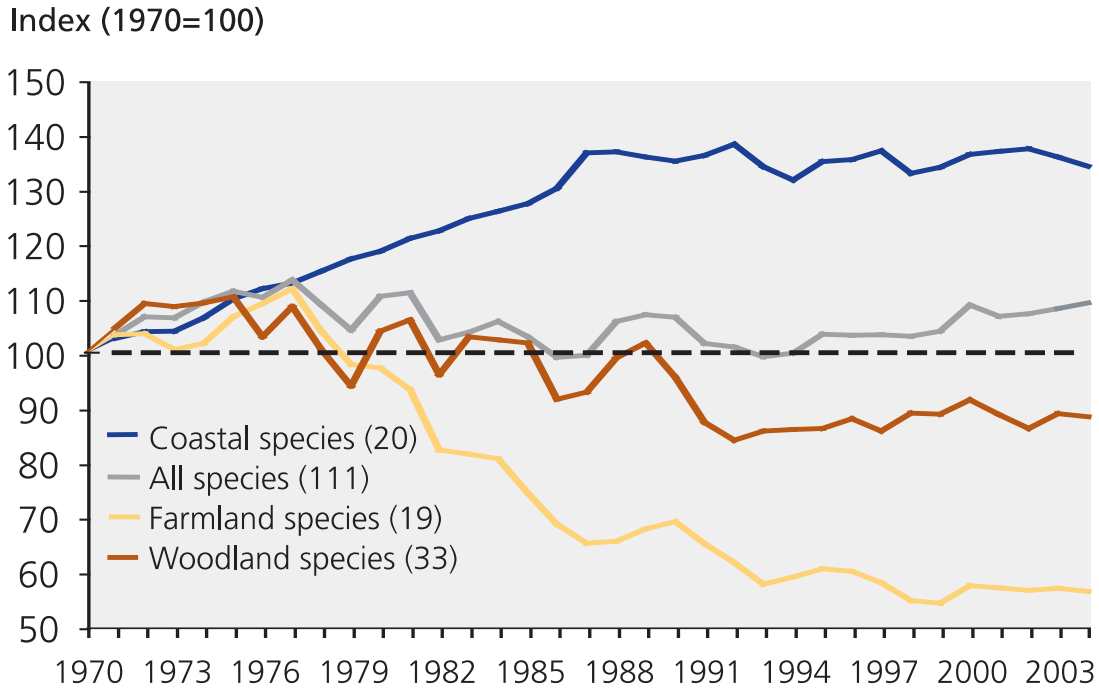
Source: UK Biodiversity Partnership

Further details: www.defra.gov.uk/environment/statistics/wildlife/index.htm

Wildlife

Population of wild birds: 1970–2004

United Kingdom



Wild bird populations are considered to be a good indicator of the broad state of the wildlife and countryside.

The overall index of populations of British breeding birds has been relatively stable over the last two decades. In 2004 it was 9 per cent higher than in 1970 and nearly 6 per cent higher than in 1996.

Since the mid-1970s, farmland and wood bird populations have seen significant decreases of nearly 50 and 20 per cent respectively. Coastal bird populations have risen by over 20 per cent. However, both farmland and woodland bird populations appear to have stabilised, with little change since 1996.

Although populations of the more common farmland and woodland birds have been declining, rare bird populations, which are not included in this index, have been stable or rising. This reflects conservation efforts focused on these species.

(See also Explanatory Notes page 72).

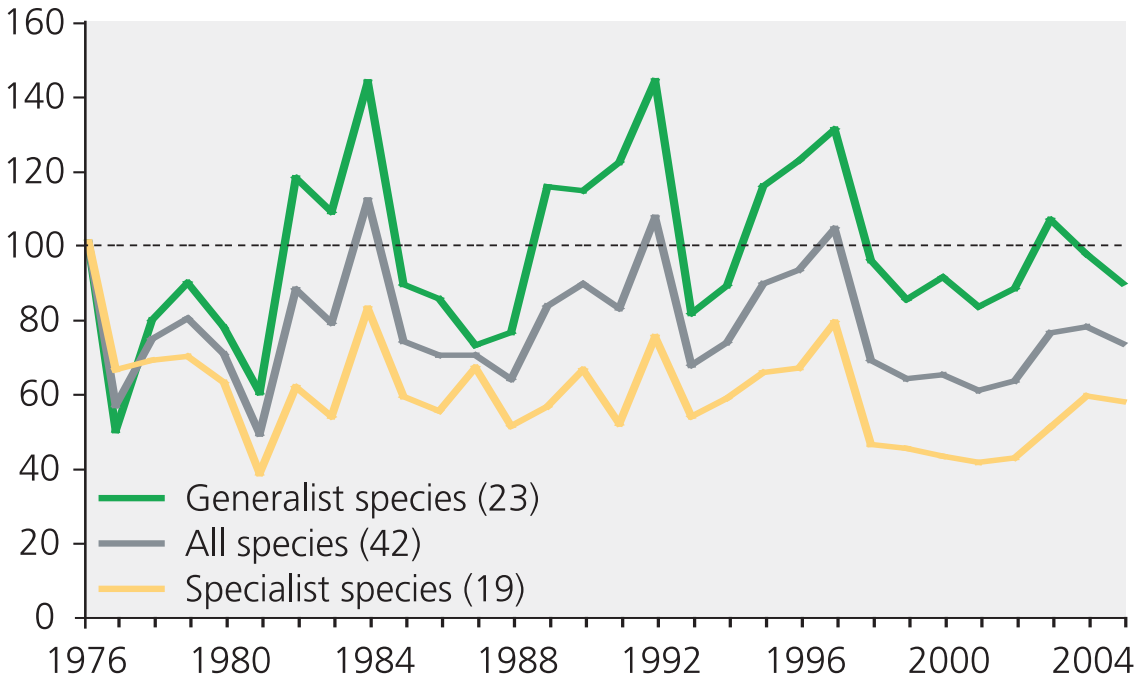
Source: Defra, RSPB, BTO

Further details: www.defra.gov.uk/environment/statistics/wildlife/index.htm

Populations of butterflies: 1976–2005

England

Index (1976=100)



The overall population of butterflies has fluctuated over the last thirty years, with peaks at six to eight year intervals, and a progressive decline over a 30 year period.

The 19 'specialist' species have fared worse than the 23 'generalist' species. In 2001 populations of specialist species were almost 60 per cent lower than in the baseline year of 1976 but in 2004 and 2005 had recovered to be just over 40 per cent below the baseline.

(See also Explanatory Notes page 72).

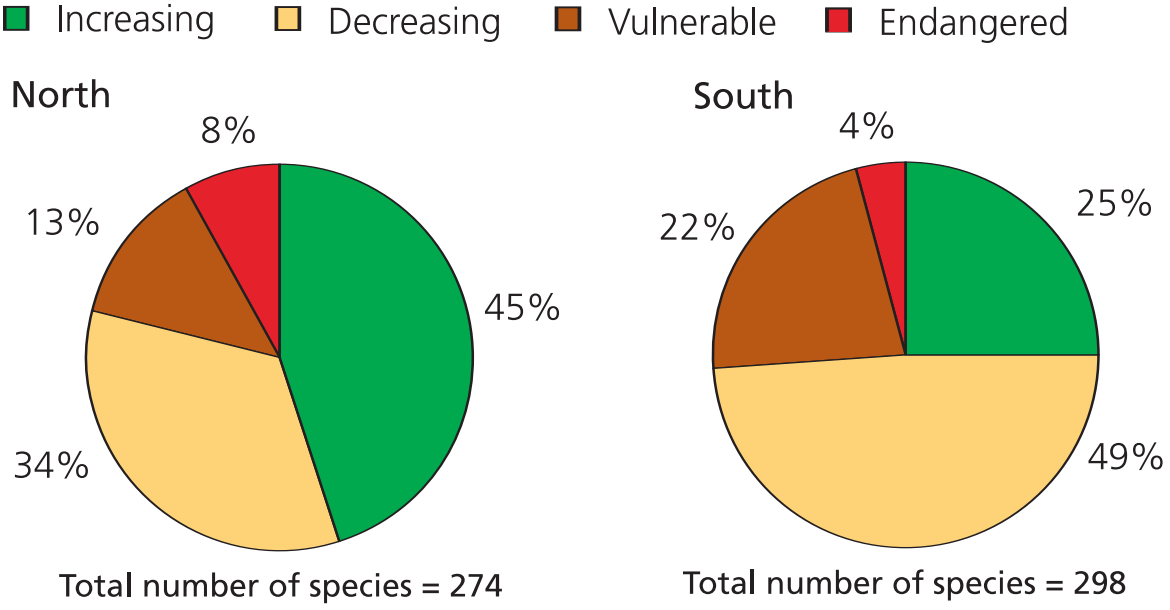
Source: Butterfly Conservation, CEH

Further details: www.defra.gov.uk/environment/statistics/wildlife/index.htm

Wildlife

Changes in moth populations in northern and southern Britain: 1968–2002

England



In northern Britain, just over a fifth of the 274 species are classified as endangered (23 species) or vulnerable (35 species) as defined by the IUCN (The World Conservation Union).

In southern Britain, just over a quarter of the 298 species are classified as endangered (12 species) or vulnerable (66 species).

Categories are based on annual rates of change estimated from long-term trends from 1968–2002.

(See also Explanatory Notes page 73).

Source: Defra, netcen

Further details: www.defra.gov.uk/environment/statistics/wildlife/index.htm

Explanatory notes

Pages 13: Population projections

Projection figures from the 2004-based national population projections. The projection is sensitive to variations and influences associated with future fertility, mortality and migration. An updated analysis following from the 2001 Census rebasing has been scheduled for later this year and will take account of the revisions made to population estimates in 2003 and 2004.

Pages 14, 15: Electricity generation

Figures on fuel use for electricity generation can be compared by either using the volumes of fuel input to power stations as on page 13, or use the amount of electricity generated and supplied by each fuel (fuel output) as on page14. The fuel input basis takes no account of differences in how efficiently different fuel types are converted into electricity, or improvements in efficiency over time, but is used on page 13 because data on a fuel output basis are not available back to 1990. Percentage shares based on fuel outputs reduce the contribution of coal and nuclear, and increase the contribution of gas (by about 6 percentage points in 2005) compared with the fuel input basis. This is because of the higher conversion efficiency of gas. The fuel input for hydro or wind power is taken as directly equivalent to the electricity generated, and the fuel input for nuclear power as the electricity generated divided by the thermal efficiency of nuclear power stations (38 per cent in 2005).

Other fuels on page 13 include coke, breeze, coke oven gas, blast furnace gas, waste products from chemical processes, refuse derived fuels and other renewable sources including wind and hydro. Direct imports of electricity from the continent are excluded.

Pages 16: CO_2 emissions from household consumption

The food, drink and catering category includes the energy used in production of food but excludes the transport of food, private shopping trips and energy used for cooking which are all covered in other categories.

Pages 17: Energy consumption per household

Dishwashers, washing machines etc includes dishwashers, washing machines, tumble driers and washer driers; fridges etc includes chest freezers, upright freezers, fridge-freezers and refrigerators; home electronics includes domestic information and communications technology equipment.

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Page 20: Serious pollution incidents

Some incidents have an impact on more than one medium therefore the sum of water, air and land incidents exceeds the actual total number of incidents due to double counting.

Page 25: Length of the growing season

The line on the chart shows smoothed figures giving an indication of the trend but there is greater uncertainty for the first and last decade of the series.

Pages 27, 28: Greenhouse gas emissions

Emissions of the basket of greenhouse gases (CO_2, CH_4, NO_2, HFCs, PFCs and SF_6) are presented based on their global warming potential, that is their relative contribution to global warming.

The UK greenhouse gas basket figures were revised in August 2006 following changes to the methane emission estimates.

The UK's Kyoto target is to reduce by 12.5 per cent from base year by 2008–2012. The base year is defined as total global warming potential of CO_2, CH_4 and NO_2 in 1990 and HCFs, CFCs and SF_6 in 1995.

For EU–15 the base year for CO_2, CH_4 and NO_2 is 1990; for the fluorinated gases, 13 Member States have indicated they have chosen to select 1995 as the base year, whereas Austria and France have chosen 1990. The figures for EU–15 greenhouse gas emissions are on a slightly different basis from those showing emissions for the UK only. The EU-15 figures exclude emissions from land use change and forestry since this can currently be treated differently between countries.

EU–15 refers to the 15 members states of the European Union in the period prior to enlargement in 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Pages 28, 29, 30, 35, 36, 37: Emissions

Emissions estimates for the UK are updated annually to reflect revisions in methodology and the availability of new information. These adjustments are applied retrospectively to earlier years and hence there are differences from the data published in previous editions of the booklet.

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Page 30: Methane emissions

These figures take into account a significant upwards revision in estimates of emissions from landfill in August 2006.

Pages 33, 35: Particulates

Particulate matter is commonly measured by a method that determines the mass of a fraction of the particles in the air that are most likely to be deposited in the lungs. PM_{10} is the particulate matter which passes through a size-selective filter set to preferentially collect smaller particles: collecting 50 per cent of particles 10 microns (10 thousandths of a millimetre) in diameter and 95 per cent of particles of 5 microns.

Page 36: SO_2 emissions; page 37: NO_X emissions

Emissions from large combustion plants (LCPs) include emissions from all power stations and refineries and from some industrial sources. From 1991 actual emissions have been assessed for individual large plants. Up to 1990 estimates have been made based on the estimated proportions from the relevant sources: power stations, refineries, iron and steel and other industrial sources.

Pages 38, 39: River water quality

In Scotland, since 1996, an overall classification has been used combining chemical, biological, nutrient and aesthetic quality. The Scottish classification system and criteria for determining which river lengths should be monitored is different from the other countries so comparisons with other countries should be treated with caution.

In Scotland a new digitised river network was introduced in 2000 and in Northern Ireland the monitoring network has expanded considerably, especially in 2000 for biological quality and 2002 for chemical quality.

Biological grading is based on the monitoring of small animals (invertebrates) which live in, or on the bed of, rivers and canals.

Page 40: Nitrate concentrations

Rivers with an average nitrate concentration level greater than 30 $mgNO_3/l$ are classified as having high concentrations in the General Quality Assessment (GQA) for nitrate. This measure enables trends and regional differences in nitrate concentrations to be shown. Average concentrations cannot be directly compared with the EU maximum admissible concentration

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for drinking water of 50mgNO_3/l to be met by 95 per cent of samples, which is also the threshold established by the World Health Organisation.

Page 44: Drinking water

Figures for 2004/5 are not directly comparable to previous years because of the implementation of new Water Supply (Water Quality) Regulations throughout the UK. Figures shown are tests of EU and national parameters only, as these are mandatory parameters, and the closest for comparison with previous years' data.

Page 46, 47: Bathing waters

Under the EC Bathing Water Directive (76/160/EEC), eleven physical, chemical and microbiological parameters are measured to assess bathing water quality, including total and faecal coliforms, which are generally considered to be the most important indicators of the extent to which water is contaminated by faecal material. Samples of bathing water are taken at designated sites at regular intervals two weeks before and then during the bathing season, which usually covers the period from mid-May to end-September in England and Wales, and from the beginning of June to mid-September in Scotland and Northern Ireland. In the UK a minimum of 20 samples are normally taken at each site. The Directive gives both mandatory and more stringent guideline values for a number of the parameters. The water quality component of the international Blue Flag beaches scheme uses the same conditions as EC guideline compliance and, additionally, the Directive's guideline limit for faecal streptococci. The guideline standards quoted in this booklet refer to the water quality standards used for the Blue Flag scheme.

Page 45: Riverine and direct inputs

Riverine inputs are the loads conveyed by rivers based on sampling points just upstream of the zone of tidal influence. They reflect all point sources and diffuse losses upstream of these points.

Direct inputs are those reaching the marine environment via discharges downstream of the riverine monitoring points. Typically, inputs are estimated from 12 samples taken each year. Some samples are taken that contain substances below the limits of detection and where this occurs two estimates are made: an upper and a lower. The upper estimate assumes that the substance is present at the level of detection and the lower assumes that concentrations are zero. Upper (worst case) estimates are used on this page.

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Page 51 Noise complaints

The information reported to the EHOs is considered to give, at best, only a very approximate indication of the trend in noise complaints from these sources.

Page 52: Total waste

Estimates shown in the chart are mainly based on data for the period 2004, although estimates for sewage sludge relate to 2005 and the figure for construction and demolition waste relates to 2002/03. Construction and demolition waste includes excavated soil and miscellaneous materials as well as hard materials, such as brick, concrete and road planings. Waste from the agriculture sector excludes manure or straw and will come under the same legislative controls as other forms of waste later in 2006. Manure and slurry when spread at the place of production, for the benefit of agriculture, will not be considered waste under the new controls.

Estimates for end of life vehicles have been included in the commercial and household sectors and figures on end of life ships have been included in the commercial sector.

Page 53, 54: Household waste

Household waste includes household bin waste and also waste from civic amenity sites, other household collections and recycling sites.

Pages 58: Agri-environment schemes

ESA and CSS schemes are now closed to new applicants. A new agri-environment scheme, Environmental Stewardship, which comprises Entry Level Stewardship, Organic Entry Level Stewardship and Higher Level Stewardship, was introduced in March 2005.

Page 60: SSSIs

Farmland SSSIs are not necessarily on farms but rather relate to habitats that are generally maintained by agricultural management.

English Nature assesses the condition of SSSIs using categories agreed for the UK through the Joint Nature Conservation Committee (JNCC). SSSI condition is a measure both of the quality of the special habitat and species features on SSSIs, and the management measures in place to recover and conserve these features. (Sites that are in a favourable or unfavourable

recovering condition are contributing to meeting the PSA target). In essence, if an SSSI is in favourable or recovering condition, it means that the habitat and the species are in a healthy state and are being conserved for the future by appropriate management. If an SSSI is assessed as unfavourable, this means that there is a current lack of appropriate management, or that there are damaging impacts which need to be addressed.

Page 63: Priority species and habitats

The UK Biodiversity Action Plan (BAP) was published in 1994 in response to the UN Convention on Biological Diversity (CBD). Through a series of individual action plans it established recovery targets for the most threatened species and habitats, identified the factors for their decline and prioritised the work that was needed to bring about improvements in each case. Assessment in the progress with implementation of the BAP takes place every three years and two reports have been completed so far, in 1999 and 2002. The information on page 63 provides an overview of the 2002 status of 436 priority species and habitats occurring in the United Kingdom.

Page 64: Bird populations

Wild bird populations are considered to be a good indicator of the broad state of the wildlife and countryside because they occupy a wide range of habitats, they tend to be near or at the top of the food chain and considerable long-term data have been collected.

Species included in these indices are native to the UK and have more than 500 breeding pairs across the UK. At national level this gives 111 native species, of which 33 are woodland, 19 are farmland and 15 are coastal species. The indices portray the annual changes in abundance of all species since 1970. Individual species populations within the indices may be increasing or decreasing, irrespective of the overall trends. The indicators are considered to give reliable medium to long term trends.

Pages 65: Butterfly populations

Butterflies are considered good biodiversity indicators because they respond rapidly to changes in environment and management, occur in a wide range of habitats, and are representative of many other insects, which collectively account for more than 50 per cent of terrestrial UK wildlife species. Butterflies play a complementary role to birds as an indicator, because they use the landscape at a far finer scale.

The indicator includes the 42 out of 54 native resident English butterfly species for which sufficient monitoring data are available. The indicator includes a breakdown for 19 specialist (low mobility species restricted to semi-natural habitats) and 23 generalist (mobile species that occur in a wide range of habitats in the wider countryside) species, from data collected at approximately 1,000 sites.

Pages 66: Moth populations

The criteria for the categories are: endangered = decline of more than 50 per cent; vulnerable = decline between 30 and 49 per cent; decreasing = decline between 0 and 30 per cent; increasing = increase of more than 0 per cent.

Some conversion factors

metric		to metric		*to imperial*
1 tonne	=	1,000 kilograms	=	*0.984 tons*
1 hectare	=	10,000 sq metres	=	*2.47 acres*
1 sq kilometre	=	100 hectares	=	*0.386 sq miles*
1 kilometre	=	1,000 metres	=	*0.621 miles (1,094 yards)*
1 litre	=	0.001 cubic metres	=	*1.76 pints (0.22 gallons)*

Symbols used in this booklet

.. = data not available
p = provisional data

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