

Submarine Dismantling Project

SEA Scoping Report Update

Annex A - Review of National Baseline Conditions

March 2011



This Annex contains the following information:

- Table A1 – Baseline Information

National-level information is provided for each of the SEA Annex I categories to provide the appropriate context for generic assessment of the strategic options for the SDP. The baseline information has been drawn from information held by both the UK Government and Devolved administrations, as well as from published MOD sources, where relevant.

- Table A2 – Summary of Trends in the National Baseline, Key targets and the Likely Evolution of the Baseline (following a 'Business as Usual' Scenario)

This table sets out the recent trends in baseline conditions, together with key National targets and an assessment of likely evolution of the National baseline without the implementation of the SDP programme.



Table A1 - Summary of the Current National Baseline by SDP SEA Topic

Biodiversity and Nature Conservation	
<p>National:</p> <ul style="list-style-type: none"> • Number of SSSIs: Over 4,000 (around 1,400 SSSIs in Scotland).¹ • Number of SACs: 608 covering around 2,505,165ha (approx. 10% of the UK's land area).¹ • Number of SPAs: 256 covering around 1,610,812ha (approx. 6.7% of the UK land area).¹ <p>Other important sites: 146 Ramsar sites covering around 3% of the UK land area¹. UK maps showing the distribution of protected sites are available online.²</p> <p>Current issues for biodiversity, flora and fauna: Current cause of unfavourable condition in designated sites include: lack of remedial management; under- or over-grazing; water management; water quality; development with planning permission; and air pollution.¹</p> <p>As at 1 January 2008 the overall condition of habitats in SSSIs has been assessed as 80% favourable or recovering. SSSI condition varies between habitats. The only habitats with less than 50% in favourable or recovering condition are rivers and streams, and canals. The habitats with the greatest area in unfavourable condition are bogs, heathlands, and intertidal mudflats and saltmarsh. An analysis of the causes of unfavourable condition and threats to the range of habitats has revealed the key pressures and risks to be:</p> <ul style="list-style-type: none"> • habitat destruction and fragmentation by development; • agricultural intensification and changes in agricultural management practices; • changes in woodland and forestry management; • water abstraction, drainage or inappropriate river management; • inappropriate coastal management; • lack of appropriate habitat management; • atmospheric pollution (acid precipitation, nitrogen deposition); • water pollution from both point and wider (diffuse) agricultural sources; • climate change and sea level rise; • sea fisheries practices; • recreational pressure and human disturbance; and • invasive and non-native species.¹ <p>The population (and range) of some species and the extent of some habitats in England has declined as a result of changes in land use, and is continuing to decline particularly since the end of the Second World War although some species have increased in population and range due to their adaptability¹⁰.</p> <p>There are 182 protected areas in UK inshore waters with a marine element, which includes 81 Special Protection Areas (SPAs) with marine habitats for birds, 98 Special Areas of Conservation (SACs) with marine habitats or species and three Marine Nature Reserves. In total the area coverage of these sites exceeds 1.8 million hectares, or 2.2% of UK waters³</p> <p>Scotland:</p> <ul style="list-style-type: none"> • Number of SSSIs: 1450 covering 13% of Scotland. • Number of SACs: 239 covering 9.6% of Scotland. • Number of SPAs: 147 covering 8.2% of Scotland. • Other important sites: 51 Ramsar sites covering 3.9% of Scotland.⁴ <p>Current issues for biodiversity, flora and fauna: The Scottish Biodiversity Group's report in 2000, Action for Scotland's Biodiversity identified seven key issues: farming, forestry and fisheries as the main three with land development, air quality, water quality and transport⁵</p>	<p>References:</p> <ol style="list-style-type: none"> 1. State of the Natural Environment Report' (2008) http://naturalengland.etraderstor.es.com/NaturalEnglandShop/product.aspx?ProductID=31a51089-6654-4d48-8f89-30d3c8c66aee 2. Magic maps, http://www.magic.gov.uk/Static/Maps/gb.asp 3. Defra http://www.defra.gov.uk/foodfarm/fisheries/documents/mppp2009-10info.pdf (accessed 04/10/2010) 4. SNH Summary of natural heritage designations http://www.snh.gov.uk/publications-data-and-research/environmental-data/facts-and-figures/protected-areas/ (accessed 05/10/2010) 5. SEPA (2007) State of Scotland's Environment 2006 6. JNCC (2009) Spatial/summary data http://www.jncc.gov.uk/page-4 (accessed June 2010) and WAG (2009) Wales Spatial Plan Update Sustainability Appraisal and Strategic Environmental Assessment Environmental Report Appendix Volume 3 – Topic Papers. 7. Department of the Environment (2010) Northern Ireland Environmental Statistics Report 8. MOD, Sustainable Development Report and Action Plan, 2008, http://www.mod.uk/NR/rdonlyres/D8407A1C-CA68-4AD4-8E17-9F71B151AF6A/0/SusDevReport2008.pdf. And MOD, Stewardship Report on the Defence Estates, 2007-08, http://www.defence-estates.mod.uk/estate/estatestrategy.php 9. MOD, Stewardship Report on the Defence Estates, 2008/09, http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipreport200809v7.pdf 10. Lawton et al (2010) <i>Making Space for Nature: A review of England's Wildlife Sites and</i>



Biodiversity and Nature Conservation	
<p>Wales:</p> <p>Designated biodiversity and geodiversity sites either partially or completely within Wales include:</p> <ul style="list-style-type: none"> • Number of SSSIs: Over 1,000. • Number of SACs: 92. • Number of SPAs: 20. • Other important sites: 10 Ramsar sites⁶ <p>Northern Ireland:</p> <p>In March 2009, a total of 99,300 hectares had been declared as Areas of Special Scientific Interest (ASSIs), 66,400 hectares as SACs, 114,600 hectares as SPAs and 77,700 hectares as Ramsar sites. There is some overlap of area between these different types of designation and therefore, these cannot be totalled to give an absolute figure on the extent of designations.⁷</p> <p>MOD specific data:</p> <p>The MOD rural and urban estate supports 37 UK Government Biodiversity Action Plan (UK BAP) priority habitats and 139 UK BAP priority species.⁸</p> <p>In March 2009 the MOD had management responsibility for 172 Sites of Special Scientific Interest (SSSIs) and their equivalent in Northern Ireland, Areas of Special Scientific Interest (ASSIs). Over 110 also had international and European nature conservation designations.^{8,9}</p> <p>In March 2009 the following percentages of MOD managed SSSIs were in target condition: 91.5% in England (against a Government target of 95% by 2010), 68% in Scotland (target 95% by 2010), 78% in Wales (target 85% by 2013) and 57% in Northern Ireland (target 95% by 2013).^{8,9}</p>	<p><i>Ecological Network</i></p>

Population	
<p>National Demographics:</p> <p>Resident population of UK of 61,383,200 in mid-2008.¹</p> <ul style="list-style-type: none"> • 62% of population is of working age (aged 15 to 64). (66.1% males and 58.1% females).¹ • 76.5% of working age population is economically active.² • 70% of working age population is in employment.² • 7.8% of working age population is unemployed.² <p>Of those of working age in the UK in 2009: 29.8% have NVQ4 and above; 15.4% have NVQ3 and above; 16% have NVQ2 and above; 13.4% have NVQ1 and above; 8.7% have other qualifications; and 12.6% have no qualifications.²</p> <p>In England and Wales, between 2008/09 and 2009/10 estimates from the British Crime Survey (BCS) indicate vehicle-related thefts fell by 17 per cent, burglary fell by 9% and violent crime fell by one per cent. All crime BCS crime fell by 9%.</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Office for National Statistics 2008 mid-year population estimates 2. NOMIS, Official Labour Market Statistics, Annual Population Survey, 2010, https://www.nomisweb.co.uk 3. NOMIS, Official Labour Market Statistics, Annual survey of hours and earnings - resident analysis, 2008, https://www.nomisweb.co.uk/out/put/dn87000/{AFB7B1A5-142C-4D4F-BDE2-467C1389CB90}/nomis_2009_08_20_135116.xls 4. NOMIS, Official Labour Market Statistics, Job Density, 2007, https://www.nomisweb.co.uk/out/put/dn87000/{AFB7B1A5-142C-4D4F-BDE2-467C1389CB90}/nomis_2009_08_20_135513.xls 5. Defra, Sustainable Development Indicators, 2009, http://www.defra.gov.uk/sustain



Population

Number of crimes recorded by the police in England and Wales:⁶

	2008/09	2009/10	Change
	Number of offences (thousands)		%
Vandalism	2,700	2,408	-11
Burglary	725	659	-9
Vehicle-related theft	1,476	1,229	-17
Bicycle theft	527	480	-9
Other household theft	1,155	1,163	1
Household acquisitive crime	3,883	3,531	-9
All household crime	6,583	5,939	-10
Theft from the person	725	525	-28
Other theft of personal property	1,096	1,036	-5
All violence	2,114	2,087	-1
Personal acquisitive crime	2,094	1,895	-9
All personal crime	3,936	3,648	-7
All BCS Crime	10,518	9,587	-9

In 2008/09, the UK had 33,396 schools: 3,209 nursery (150,300 students); 21,568 primary (4,868,800 students); 4,183 secondary (3,928,500 students); 1,378 special (100,900 students); and 511 pupil referral units (15,700 students).⁷ (Total of 9,064,200 pupils at maintained schools and a further 627,100 at non-maintained schools).⁷

Scotland:

Resident Population of 5,168,500 in mid-2008.¹

- 67% of the population is of working age (aged 15 to 64). (49% males and 51% females).¹
- 77% of working age population is economically active.²
- 71.2% of working age population is in employment.²
- 7.4% of working age population is unemployed.²

Of those of working age in 2009: 33.9% have NVQ4 and above; 15.4% have NVQ3 and above; 14.5% have NVQ2 and above; 9.8% have NVQ1 and above; 7.6% have other qualifications; and 13.3% have no qualifications.²

Differences in legal systems and police recording mean that the recorded crime figures for Scotland are not directly comparable with recorded crime figures for England and Wales. In Scotland, recorded vehicle theft and robbery decreased by 19 per cent and 16 per cent respectively between 2008/09 and 2009/10. Overall crime fell by 10%.

In 2008/09, Scotland had 5,521 schools: 2,645 nursery (105,400 students); 2,153 primary (370,800 students); 376 secondary (304,000 students); 234 special (7,700 students); and no pupil referral units.⁷ (Total of 786,900 pupils at maintained schools and a further 30,700 at non-maintained schools).⁷

Wales:

Resident Population of 2,993,400 in mid-2008.¹

<http://www.homeoffice.gov.uk/press/2009/09/090909a9.pdf>

- Home Office, British Crime Survey in England and Wales 2009/10, <http://rds.homeoffice.gov.uk/rds/pdfs10/hosb1210.pdf>
- DCSF, Education and Training Statistics for the United Kingdom: 2009, <http://www.dcsf.gov.uk/rsgateway/DB/VOL/v000891/Chapter1.xls>
- MOD, Sustainable Development Report and Action Plan, 2009, <http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipprt200809v7.pdf>
- Scottish Neighbourhood Statistics, <http://www.sns.gov.uk/Reports/Report.aspx?ReportId=2&AreaTypeId=SC&AreaId=420>



Population	
<ul style="list-style-type: none"> • 64.8% of the population is of working age (49.5% males and 50.5% females).¹ • 72.7% of working age population is economically active.² • 66.6% of working age population is in employment.² • 8.4% of working age population is unemployed.² <p>Of those of working age in 2009: 27.3% have NVQ4 and above; 16.2% have NVQ3 and above; 17.3% have NVQ2 and above; 12.8% have NVQ1 and above; 7.7% have other qualifications; and 14.8% have no qualifications.²</p> <p>Crime as above.</p> <p>In 2008/09, Wales had 1,886 schools: 28 nursery (1,800 students); 1,478 primary (258,300 students); 223 secondary (205,400 students); 44 special (4,100 students); and 53 pupil referral units (500 students).⁷ (Total of 470,100 pupils at maintained schools and a further 9,300 at non-maintained schools).⁷</p> <p>Northern Ireland:</p> <p>Resident Population of 1,170,400 in mid-2008.¹</p> <ul style="list-style-type: none"> • 65.94% of the population is of working age (49.73% males and 50.25% females).¹ • 69.9% of working age population is economically active.² • 65.1% of working age population is in employment.² • 6.8% of working age population is unemployed.² <p>Of those of working age in 2009: 25.4% have NVQ4 and above; 14.8% have NVQ3 and above; 15% have NVQ2 and above; 10.5% have NVQ1 and above; 5% have other qualifications; and 22.3% have no qualifications.²</p> <p>Between 2007/08 to 2008/09 violence against the person declined by 0.4%, burglary increased by 6.6% and robbery increased by 12.2%. Theft of a vehicle declined by 11.5% however all theft increased by 6.1%. Total crime in Northern Ireland overall increased by 1.5%.</p> <p>In 2008/09, Northern Ireland had 1,252 schools: 98 nursery (8,200 students); 873 primary (164,800 students); 223 secondary (148,000 students); 42 special (4,600 students); and no pupil referral units.⁷ (Total of 323,300 pupils at maintained schools and no students at non-maintained schools).⁷</p> <p>MOD specific data:</p> <p>MOD employs some 281,000 military and civilian personnel.⁸</p>	
<p>National Socio-Economic:</p> <p>In 2008 UK per capita Gross Value Added (GVA) was 20,520.¹</p> <p>In 2009 the median full-time gross hourly pay in UK was £12.43 (males' median being £13.09 and the female median being £11.42). This compares to £11.98 in 2008.² In the three months to July 2010 pay growth (including bonuses) rose by 1.2% in the private sector over the previous year compared with 2.7% for the public sector. Excluding bonus payments, growth in the private sector over the year was 1.3% compared with 2.8% for the public sector.³</p> <p>In the period May - July 2010 the UK had a total of 29,158,000⁵ jobs.</p> <p>In Jan 2009 - Dec 2009, the UK had an unemployment rate of 7.8% (all people of working age). This compares to the previous year when the UK had an unemployment rate of 5%.³</p> <p>The recent UK recession has caused a downturn in many sectors and markets of the UK economy, however in the second quarter of 2010 the UK Economy grew by 1.7% compared to the second quarter of 2009. Changes between quarters have also been positive (UK GDP rose by 1.2% between the first and second quarter.⁴ Output of the production industries rose by 2% between the second quarter of 2009 and the second quarter of 2010; output in the service industries rose 1.5%. Manufacturing output grew by 4.3%⁴</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Regional, sub-regional and local gross value added 2009, http://www.statistics.gov.uk/pdfdir/gva1209.pdf 2. NOMIS, Official Labour Market Statistics, Annual survey of hours and earnings - resident analysis https://www.nomisweb.co.uk/output/dn87000/{AFB7B1A5-142C-4D4F-BDE2-467C1389CB90}/nomis_2009_08_20_160703.xls 3. NOMIS, Official Labour Market Statistics, National Indicators, June-August 2009, https://www.nomisweb.co.uk/articles/news/files/LFS%20headline%20indicators.xls 4. ONS, UK Snapshot, http://www.statistics.gov.uk/insta



Population

Scotland:

In 2008 Scotland's per capita Gross Value Added (GVA) was 20,086.¹

In 2009 the median full-time gross hourly pay in Scotland was £12.04 (males' median being £12.56 and the female median being £11.31). This compares to £11.60 in 2008 and represents growth of 3.8% in nominal hourly total full time pay over the previous year.²

In the period May - July 2010 Scotland had a total of 2,455,000⁵ jobs.

In Jan 2009 - Dec 2009, Scotland had an unemployment rate of 7.1% (all people of working age). This compares to the previous year when it had an unemployment rate of 5%.³

Output of the Scottish economy rose by 4.7% between 2007 and 2008¹

Wales:

In 2008 Wales' per capita Gross Value Added (GVA) was 15,237.¹

In 2009 the median full-time gross hourly pay in Wales was £11.29 (males' median being £12.02 and the female median being £10.36). This compares to £10.79 in 2008 and represents growth of 4.6% in nominal hourly total full time pay over the previous year.²

In the period May - July 2010 Wales had a total of 1,319,000⁵ jobs.

In Jan 2009 - Dec 2009, Wales had an unemployment rate of 8.4% (all people of working age). This compares to the previous year when it had an unemployment rate of 6.5%.³

Output of the Welsh economy rose by 3% between 2007 and 2008¹

Northern Ireland:

In 2008 Northern Ireland's per capita Gross Value Added (GVA) was 16,188.¹

In 2009 the median full-time gross hourly pay in Northern Ireland was £11.05 (males' median being £11.37 and the female median being £10.69). This compares to £10.27 in 2008 and represents growth of 7.6% in nominal hourly total full time pay over the previous year.²

In the period May - July 2010 Northern Ireland had a total of 781,000⁵ jobs.

In Jan 2009 - Dec 2009, Northern Ireland had an unemployment rate of 6.8% (all people of working age). This compares to the previous year when it had an unemployment rate of 4%.³

Output of the Northern Irish economy rose by 3% between 2007 and 2008¹

MOD specific data:

The MOD is a major source of employment. Some 281,000⁷ sailors, soldiers, airmen and civilians are directly employed in Defence, and many more are sustained indirectly in the Defence industry through the £38.6Bn the Department spent in 2008/09 to support and equip the Armed Forces.³

Defence and Aerospace is the United Kingdom's second largest industry sector. The Typhoon programme alone sustains an estimated 100,000 UK jobs, many highly skilled and paid, and has produced a number of technology spin-offs.⁸

- [ntfigures.asp](#)
5. Nomis, Labour Force Survey, May - July 2010, <https://www.nomisweb.co.uk>
 6. ONS Labour Market Statistics, May 2010, <http://www.statistics.gov.uk/pdffir/lmsuk0510.pdf>
 7. MOD, Sustainable Development Report and Action Plan, 2009, <http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshiprp/200809v7.pdf>
 8. MOD, Stewardship Report on the Defence Estates, 2007-08, <http://www.defence-estates.mod.uk/estate/estatestrategy.php>



Human Health and Wellbeing

National (Non-radiological)

- Life expectancy at birth for males of 77.4 years (2006 - 2008).¹
- Life expectancy at birth for females of 81.6 years (2006 - 2008).¹

In 2006-2008, 37% of males and 38% of females in UK rated their health as good; and 44% of males and 41% of females rated their health as very good. Consequently, around 19% to 21% of males and females in the UK felt that their health was less than 'good'.¹

In 2007 the main causes of death in the UK were diseases of the circulatory system, and neoplasms (cancers).¹ There are high levels of hypertension and overweight/obesity in the UK. Public health trends often correlate with deprivation and these figures for illness are invariably far less favourable in deprived areas.²

Deaths from respiratory diseases (including influenza, pneumonia, chronic lower respiratory disease, bronchitis, emphysema and other chronic obstructive pulmonary diseases and asthma) are higher in the UK than in any other EU Member State. In the UK there are 87.7 deaths per 100,000 males and 64.0 deaths per 100,000 females from respiratory diseases, compared to an EU average of 63.4 and 32.5.¹

Scotland:

- Life expectancy at birth for males of 75.0 years (2006 - 2008).¹
- Life expectancy at birth for females of 79.9 years (2006 - 2008).¹

In 2006-2008, 36% of males and 36% of females in Scotland rated their health as good; and 45% of males and 44% of females rated their health as very good.¹

In 2007 the main causes of death in Scotland were diseases of the circulatory system, and neoplasms (cancers).¹

Wales:

- Life expectancy at birth for males of 76.9 years (2006 - 2008).¹
- Life expectancy at birth for females of 81.2 years (2006 - 2008).¹

In 2006-2008, 27% of males and 31% of females in Wales rated their health as good; and 50% of males and 46% of females rated their health as very good.¹

In 2007 the main causes of death in the UK were diseases of the circulatory system, and neoplasms (cancers).¹

Northern Ireland:

- Life expectancy at birth for males of 76.3 years (2006 - 2008).¹
- Life expectancy at birth for females of 81.2 years (2006 - 2008).¹

In 2006-2008, 37% of males and 37% of females in Northern Ireland rated their health as good; and 45% of males and 42% of females rated their health as very good.¹

In 2007 the main causes of death in the UK were diseases of the circulatory system, and neoplasms (cancers).¹

National (Radiological)

Public radiological dose limits (excluding natural background radiation and medical procedures) are:

- the sum of exposures should not exceed the dose limit of 1mSv per year;
- the dose received from any new source does not exceed 0.3mSv per year; and
- the dose received from any single site does not exceed 0.5mSv per year.

References:

1. ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf
2. Health Survey for England 2007 Healthy lifestyles: knowledge, attitudes and behaviour Summary of key findings, Office of National Statistics, <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6637>.
3. Health Protection Agency, Ionising Radiation Exposure of the UK Population: 2005 Review, http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_eb_C/1195733839711?p=1197637096018



<p>Exposures to members of the public from artificial sources remain at a very low level. Individual annual doses to members of the public from practices, other than medical procedures, are generally much less than the annual dose limit of 1 mSv.³</p> <p>The average radiation dose (including natural background radiation and medical procedures) to the UK population is approximately 2.7 mSv/y (around 84% is due to natural sources, which varies in intensity as a function of underlying geology). Only 0.1% of the annual average dose is directly due to radioactive discharges from nuclear and non nuclear sources. (The 2.7mSv is composed of: 0.33mSv natural Cosmic radiation; 0.35mSv natural Gamma radiation; 0.25mSv natural internal radiation; 1.3mSv natural Radon radiation; 0.41mSv artificial medical radiation; 0.006mSv artificial occupational radiation; 0.006mSv artificial fallout radiation from weapons testing in the past; 0.0009mSv artificial disposal radiation; and 0.0001mSv artificial consumer products radiation).³</p> <p>The legal radiation dose limit set for workers is 20 mSv/y.³</p> <p>MOD specific data:</p> <p>In 2003 radiological discharge was assessed as being insignificant or extremely low at all main defence related sites. Exposures of less than 5µSv were received by all critical groups around all defence sites except Holy Loch (9µSv).³</p>	
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Human Health (Noise)	
<p>National:</p> <ul style="list-style-type: none"> Percentage of people disturbed by residential sources: 26% in 2008.¹ Percentage of people disturbed by non-residential sources: 10% in 2008.¹ <p>Major sources of noise: Traffic, alarms, fireworks and children were the most cited causes of disturbing noise.¹</p> <p>Current issues for noise: Noise and vibration are predominantly local in nature and difficult to measure on a regional or national scale.¹ The UK planning system recognises that noise has the potential to seriously impact on quality of life and to cause disturbance to sensitive ecological receptors.¹ Essential operational military activities such as training and flying are exempt from Part III of the Environmental Protection Act 1990 and Directive 2002/49/EC on the Assessment and Management of Environmental Noise.³</p> <p>Scotland:</p> <p>In 2008/09 a total of 58,313 noise complaints were received by local authorities in Scotland.⁴</p> <p>Scottish Noise Mapping indicates that road traffic is the dominant noise exposure source.⁶</p> <p>Wales:</p> <p>Wales Noise Mapping indicates that road traffic is the most dominant noise exposure source.⁷</p> <p>Northern Ireland:</p> <p>In 2008/09 a total of 11,099 noise complaints were received by local authorities in Northern Ireland.⁵</p> <p>Northern Ireland Noise Mapping indicates that road traffic is the dominant noise exposure source.⁸</p> <p>MOD specific data:</p> <p>The MOD's activities that are principal sources of noise are flying from airfields; ground-running and testing of engines; low flying; and use of air, gunnery and explosive ranges. There is no central analysis of MOD sources of environmental noise.²</p>	<p>References:</p> <ol style="list-style-type: none"> Environmental Protection UK, National Noise Survey Report 2008, http://www.environmental-protection.org.uk/assets/library/documents/National_Noise_Survey_2008.pdf MOD, Aircraft Environmental Noise Report, revised version dated May 2008, http://www.mod.uk/NR/rdonlyres/72677C06-190B-41F0-A166-F28AABED2CEB/0/WRAYReportRevisedHolmesFOIRequestPartialUnredact.pdf The Pattern of Military Low flying across the United Kingdom 2007/2008 http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/AirSafetyandAviationPublications/MilitaryLowFlying/AnnualReports/ The Scottish Government, 2009, Noise Complaints, http://www.scotland.gov.uk/Topics/Statistics/Browse/Environment/seso/sesoSubSearch/Q/SID/53 Department of the Environment, 2009, Noise Complaint Statistics for Northern Ireland, http://www.doeni.gov.uk/noise_complaint_statistics_report_for_northern_ireland_200809.pdf The Scottish Government, 2007, Noise Exposure Statistics Reported to Europe, http://www.scottishnoisemapping.org/public/noise-statistics.aspx



Human Health (Noise)

7. Welsh Assembly Government, Population Exposure, <http://wales.gov.uk/desh/research/research/noise/populationexposure/populationexposure.xls?lang=en>
8. <http://www.noiseni.co.uk/index/maps-and-charts.htm>

Soil and Geology

National:

Contamination: In 2005 there was estimated to be around 413,906 hectares of land affected by industrial activity in England and Wales which may be contaminated, (around 2% of the land area in England and Wales), and a further 82,043 hectares in Scotland.^{1 2} The extent of contaminated land in Northern Ireland is currently unknown.

In England alone, there was estimated to be around 307,672 hectares of land that may be contaminated. A total of 659 sites had been determined as 'contaminated land' in England by the end of March 2007. The Contaminated Land Regime was extended to cover radioactivity from August 2006 in England, which introduced a system for identifying and remediating contamination that is exposing people to radiation in the long term. At the time of reporting, no site has been determined as contaminated land due to radioactivity.²

Predominant geology: The geology of the UK is diverse and has resulted in over 800 soil types. As a broad overview the following rock types exist in a progression from North West to South East (predominant rock types): Tertiary Volcanic Rocks; Crystalline Rock of Pre-Cambrian and later age; Lower Carboniferous to Cambrian; Triassic and Permian; Early Precambrian and Devonian; Jurassic; Cretaceous; Tertiary and Marine Pleistocene; and finally a return to Cretaceous.³

The quality of the land across the UK varies, with the best and most versatile agricultural land generally situated in the lowland and valley areas of England. Due to the topography and terrain, much of Scotland and Wales is classified as lower grade land. An estimated 21% of all farmland in England is Grade 1 and 2 land, with a similar percentage graded as subgrade 3a land. These grades are the best and most versatile land grades as classified under the Agricultural Land Classification System.⁴

Topographic features: The UK has a diversity of mountain ranges and flood plains. In England, the southern part of the country is predominantly lowland, with mountainous terrain north west of the Tees-Exe line (the Lowland-Upland divide across England), which includes the Cumbrian Mountains of the Lake District, the Pennines and limestone hills of the Peak District, Exmoor and Dartmoor.⁵

SSSIs with geological designation: Around 2,050 in the UK, of which there are an estimated 1,214 geological SSSIs in England.^{6 7 13 23}

Other important features: Across the UK there are also a number of non-statutory geological and geomorphological sites designated at a local level, i.e. often known as Local Geological Sites (formerly Regionally Important Geological and Geomorphological Sites (RIGS)). The number of Local Sites is unknown; however there are over 50 Local Sites groups in the UK.⁶ The UK has six Geoparks (areas in Europe with an outstanding geological heritage); two in England, two in Scotland and one each in Wales and Northern Ireland. England's Geoparks are the North Pennines Area of Outstanding Natural Beauty and the English Riviera in Devon.⁵

Current issues for soils and geology: Human activity has left a legacy of soil contamination and pollution that pose a risk to water quality, ecosystems and human health as well as to land and property value.

References:

1. Indicators for Land Contamination, Science Report SC030039/SR, Environment Agency, August 2005
2. Dealing with contaminated land in England and Wales A review of progress from 2000-2007 with Part 2A of the Environmental Protection Act, Environment Agency, January 2009
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Soil and Geology

Scotland:

Contamination: In 2005, there was estimated to be around 82,034 hectares of land affected by industrial activity in Scotland that may be contaminated. A total of 13 sites (equivalent to 53 hectares) had been determined as 'contaminated land' in Scotland by the end of 2008.¹⁰

Predominant geology: As a broad overview the following rock types exist in a progression from North East to South West (predominant rock types): Pre-Cambrian (the Highlands); Carboniferous (Midland Valley area); and Ordovician and Silurian (Southern Uplands). Scotland has a large variety of soils reflecting its geological and climatic diversity. Scotland's soil is predominantly carbon rich, with podzols, peat soils and gleys accounting for more than two-thirds. These soils are found throughout Scotland with the exception of the Central Valley, which is dominated by mineral soils. Soils in the north and west are more acidic on the whole and rich in organic matter. Scotland contains a much higher proportion of organic soils than the rest of the UK.¹¹

The quality of land is highly variable with much of Scotland classified as Less Favoured Areas (suited only for improved grassland and rough grazing). Class 1 agricultural soils (suitable for a very wide range of crops) make up just 0.1% of the total land area according to the Land Capability for Agriculture classification scheme, which is distributed predominantly along the eastern coasts, and the Firths of Forth and Tay.¹²

Topographic features: Topographically, Scotland is divided into three main areas; the Highland region in the north, which includes the Cairngorm and Grampian mountain ranges; the Central Lowlands, which includes the major cities of Edinburgh and Glasgow; and the Southern Uplands, a pastoral upland area north of the English Border.

SSSIs with geological designation: Around 309 in Scotland.¹³

Other important features: Across Scotland there are also a number of non-statutory geological and geomorphological sites designated at a local level, often known as Local Geodiversity Sites. The number of Local Sites is unknown; however there are over 50 Local Sites groups in the UK.⁷ Scotland has three Geoparks: North West Highlands Geopark, Lochaber Geopark and Shetland Geopark.⁹

Current issues for soils and geology: Climate change and loss of organic matter are the most significant threats to Scottish soils.¹⁴ The effect of industry, agricultural practices, forestry and climate change upon soils, particularly carbon rich peat soils, is also a key issue. Key pollutants include chemicals, oil or waste. Organic waste, including sewage sludge, is one of the main sources of heavy metal contamination of soils from human activities.¹⁵

Wales:

Contamination: In 2005, there was estimated to be around 24,200 hectares of land affected by industrial activity in Wales that may be contaminated.¹ A total of 122 sites had been determined as 'contaminated land' in Wales by the end of March 2007.²

The Contaminated Land Regime was extended to cover radioactivity from December 2006 in Wales, which introduced a system for identifying and remediating contamination that is exposing people to radiation in the long term. At the time of reporting, no site has been determined as contaminated land due to radioactivity.²

Predominant geology: Sedimentary rocks underlie the majority of Wales, which are then overlain by a suite of acid soils, characterised by a peaty surface horizon. As a broad overview the following rock types exist in a progression from North West to South East (predominant rock types): Ordovician; Silurian; Devonian; and Carboniferous Peat covers 3% to 4% of Wales and is predominantly acid blanket peat, but with small areas of raised bog and fen peat scattered in lowland areas.¹⁶

The majority of land in Wales (almost 80%) is classified as a Less Favoured Area (areas which are difficult to farm due to limitations such as climate, location or features of the landscape, e.g. mountainous or hilly areas), almost all of which falls within the Severely Disadvantaged Area subcategory.¹⁷

Topographic features: Wales is predominantly mountainous, with the Cambrian Mountains occupying almost the entire area. There are narrow coastal plains in the south and west and small lowland areas in the north.

SSSIs with geological designation: Around 450 in Wales.⁷

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Soil and Geology

Other important features: There are 351 Geological Conservation Review Sites and 1 Geopark (Forest Fawr) in Wales. The Isle of Anglesey is currently preparing an application to become a member of the Geopark Network, although it is not yet a Geopark.⁹

Current issues for soils and geology: Soils are vulnerable to degradation through erosion, contamination and a loss of nutrients. The small proportion of land that is classified as 'best and most versatile' agricultural land needs to be conserved. There is also a need to protect soils in uplands and wetlands which contain high amounts of carbon and are vulnerable to acidification.¹⁸

Northern Ireland:

Contamination: In 2009, an estimated 12,000 sites were identified that had been used for a purpose which could potentially have caused contamination.¹⁹ The Contaminated Land regime which is set out in Part 3 of the Waste Management and Contaminated Land Order (Northern Ireland) 1997 has been enacted in Northern Ireland but is not yet in force. This regime will identify 'contaminated land' (similar to Part 2A of the Environmental Protection Act 1990 in England, Scotland and Wales).²⁰

Predominant geology: The geology of Northern Ireland varies considerably, although the predominant rock types are Igneous Basalt and Silurian sandstone and shale. The main types of soil in Northern Ireland are rankers, brown earths, podzols and gleys.²¹

Agri-food and Biosciences Institute Agricultural land classification of the region concludes the highest class of land (class 1) does not occur in Northern Ireland. Classes 2-3a account for 31% of the land and are the best and most versatile agricultural soils.²¹

Topographic features: Northern Ireland consists mainly of low-lying plateaus and hills. The highest region is the Mourne Mountains in the south east. Lough Neagh, the largest lake in the UK is around 30km west of Belfast.

Areas of Special Scientific Interest (ASSIs) with geological designation: Around 76 in Northern Ireland.²² Most raised bogs in Northern Ireland are designated ASSI's (equivalent to a geological SSSI in England, Scotland and Wales).¹⁹

The Giant's Causeway and Causeway Coast was declared a World Heritage Site in 1996.²³

Other important features: Across Northern Ireland there are also a number of non-statutory geological and geomorphological sites designated at a local level. The number of Local Sites is unknown; however there are over 50 Local Sites groups in the UK.⁷ There is one Geopark in Northern Ireland, the Marble Arch Caves Geopark, which straddles the border of Northern Ireland and the Republic of Ireland.⁹

Current issues for soils and geology: The main pressures in Northern Ireland are development, infrastructure, mineral extraction industries, and tourism. A major problem in farmland is the over-accumulation of phosphorus in the soil, due to agricultural fertilisers. The intensification and expansion of agriculture is a key pressure on soil quality and erosion.^{19 22}

MOD specific data:

In March 2008 75% of the UK built estate (around 59,600 ha) was covered by a land assessment.²⁴ An estate wide Land Quality Assessment (LQA) programme has been established and is being managed by Defence Estates. The results of LQA carried out to date indicate there is no wide spread contamination on the defence estate.²⁵

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Water	
<p>National:</p> <p>Major surface water features: The UK has a diversity of inland and coastal waters (such as reservoirs, lakes, rivers, canals, estuaries, transitional waters, and coastal waters). Protected water features include waters designated for human consumption (including those abstracted from groundwater); areas designated for the protection of economically significant aquatic species (e.g. shellfish or freshwater fish); bathing waters (under the Bathing Waters Directive); nutrient-sensitive areas; and areas with waters important to protected habitats or species under the Habitats Directive or the Birds Directive.</p> <p>Protected sites: There are 182 protected areas in UK inshore waters with a marine element, which includes 81 Special Protection Areas (SPAs) with marine habitats for birds, 98 Special Areas of Conservation (SACs) with marine habitats or species and three Marine Nature Reserves. In total the area coverage of these sites exceeds 1.8 million hectares, or 2.2% of UK waters.¹</p> <p>Water quality: 26% of rivers, 36% of lakes and reservoirs and 27% of estuaries and coasts in England and Wales are at good or better ecological status in every one of the characteristics looked at for Water Framework Directive (WFD) targets. 98.3% of England's bathing waters met the EC's minimum water quality standards in 2009, up from 96% in 2008.²</p> <p>Major ground water features: The principal aquifers of the UK are found in the lowlands of England. The most important are the Chalk, the Permo-Triassic sandstones, the Jurassic limestones and the Lower Greensand.³</p> <p>Radioactivity: The annual per capita radiation dose to people in the UK from all EC marine discharges was 0.68µSv (from 1.17µSv in 1998). Around 10% of these discharges are from the nuclear industry.⁴ Radioactivity in the marine environment arises from both naturally occurring and man-made sources, and can be harmful to humans and non-human species. The major sources of discharges are nuclear fuel production and reprocessing; research; nuclear power stations; and defence. In general radioactive discharges are strictly controlled, discharge levels have reduced and a strategy is in place to further reduce discharge levels in the future. Radioactivity levels in UK waters currently pose no risk of harm to humans or wildlife.⁵</p> <p>Scotland:</p> <p>Overall Scotland's water environment is in a good condition but a wide range of problems exist at local levels. Approximately 40% of Scottish water bodies are at risk of failing to meet environmental standards set by the Water Framework Directive. Transitional waters are most at risk followed by lochs, groundwaters and rivers. The quality of coastal waters is high and improving further.⁶</p> <p>Scotland has two river basin districts: the Scotland river basin district which covers most of Scotland and the Solway Tweed river basin district in the south of the country. In 2008, 65% of the Scotland river basin district surface water bodies and 76% of ground water bodies were classified (under the Water Framework Directive) as being of good or better condition. The significant water issues in the Scotland river basin district have been identified as diffuse source pollution; point source pollution; abstraction and flow regulation; changes to morphology; and invasive alien species.⁷</p> <p>In 2008 45% of the surface water bodies and 82% of ground water bodies in the Solway Tweed river basin district were classified as good condition or better.⁸ In 2009, 94% of Scotland's bathing waters achieved the EU mandatory standard and more than half of Scotland's bathing waters managed to achieve the more stringent guideline standard. This is a 3% increase in the number of beaches achieving mandatory compliance compared to 2008.⁹</p> <p>Wales:</p> <p>The percentage of river lengths in Wales of good chemical quality has been consistently above 90% since 1994, and has remained at around 95% for the last three monitored years (2006-08). The percentage of river length in Wales of good biological quality has steadily increased since 2000, peaking at 88% in 2008.¹⁰ In 2009, of the 82 EC-identified bathing waters monitored by Environment Agency Wales, 100% complied with the mandatory standards, up from 98.8% in 2008. EC identified beaches' performance against guideline standards also improved between 2008 and 2009, from</p>	<p>References:</p> <ol style="list-style-type: none"> Defra http://www.defra.gov.uk/foodfarm/fisheries/documents/mpp2009-10info.pdf (accessed 04/10/2010) Environment Agency http://www.environment-agency.gov.uk/research/library/data/112170.aspx (accessed 02/10/2010) GroundwaterUK http://www.groundwateruk.org/downloads/the_aquifers_of_the_uk.pdf (accessed 02/10/2010) Health Protection Agency, Ionising Radiation Exposure of the UK Population: 2005 Review, http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1195733839711?p=1197637096018 Defra http://chartingprogress.defra.gov.uk/clean-seas-radioactivity (accessed 16/03/2011) SNIFFER http://www.seaquidance.org.uk/Upload/Documents/L3EX2CurrentstateandtrendsforWATERSCO T.PDF (accessed 04/10/2010) Scottish Government (2009) <i>The river basin management plan for the Scotland river basin district 2009–2015</i> Scottish Government and Environment Agency (2009) <i>The river basin management plan for the Solway Tweed river basin district 2009–2015</i> SEPA (2010) <i>Scottish bathing waters 2009</i> WAG (2010) <i>Sustainable Development Indicators for Wales 2010</i> Environment Agency 2009 <i>Bathing Waters Report Wales</i> Department of the Environment (2010) <i>Northern Ireland Environmental Statistics Report Sustainable Development Commission 2010 Becoming the 'Greenest Government Ever', Government progress against the SOGE targets</i> MOD, Sustainable Development Report and Action Plan, 2008, http://www.mod.uk/NR/rdonlyres/D8407A1C-CA68-4AD4-8E17-9F71B151AF6A0/SusDevRepo



Water	
<p>75.6% to 89.0% for UK Guideline standards.¹¹</p> <p>Northern Ireland:</p> <p>In 2009, 58% of river waterbodies in Northern Ireland (monitored under the Water Framework Directive) are of at least a good chemical standard (Class B and above) and 41% are of at least good biological standard. Groundwater is currently of a high quality, with less than 2% of monitoring sites having an annual mean concentration of more than 40mg NO₃/l. In 2009 only two beaches (out of 24 monitored) in Northern Ireland failed to meet the mandatory standards, as stated by EC Bathing Water Directive, however less than half satisfied the guideline standards.¹²</p> <p>MOD specific data:</p> <p>The MOD water consumption baseline for 2004/ 5 was established at 33.5 Mm³. In 2008/9, the MOD used 25 M m³. The target is to reduce water consumption to an average 3m³ per person per year for office builds or major office refurbishments.¹³</p> <p>In 2002 radiological discharges at submarine berths in Plymouth, Loch Striven, Isle of Bute, Lock Goil, Loch Long and Gare Loch were below detectable levels. Levels were detectable at RRL Rosyth Dockyard (critical group dose of <1μSv), Barrow-in-Furness (critical group dose of 2μSv), Portsmouth and Isle of Wight (critical group dose of 1μSv).¹⁴</p>	<p>rt2008.pdf</p> <p>15. MOD, Sustainable Development Report and Action Plan, 2009, http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipprt200809v7.pdf</p>

Air	
<p>National:</p> <p>Air quality: Air quality in the UK is generally good. In 2008 urban background particulate levels averaged 20 micrograms per cubic metre (μg m⁻³) (Air Quality Strategy Objective and EU Limit Value is 40μg m⁻³); roadside particulate levels averaged 28 μg m⁻³; urban background ozone levels averaged 59 μg m⁻³; and rural ozone levels averaged 71 μg m⁻³.¹</p> <p>The annual per capita radiation dose to people in the UK from nuclear power station atmospheric discharges was 0.11μSv.² In the UK between 1985 and 2005 radioactive emissions to air fell by 83%.¹</p> <p>Number of AQMAs: 235 Local Authorities have declared AQMAs.³</p> <p>Major sources of air pollution: Air Quality Management Areas (AQMAs) are predominantly in urban areas and are generally related to nitrogen dioxide (NO₂) and particulates (PM₁₀) emissions largely caused around road networks.</p> <p>Number of days of moderate or high air pollution: 26 days in urban areas in 2008. 45 days in rural areas in 2008.¹</p> <p>Current issues for air quality: People in deprived communities are exposed to 41% higher concentrations of nitrogen dioxide than those people living in average communities.³ It is often very difficult to determine the effects of air pollution on SSSIs, given the complex interactions between pollution impacts, management and abiotic influences. As a result, the impacts of air pollution, and the identification of air pollution as an adverse activity affecting condition, are considered to be substantially under-reported.⁴</p> <p>UK air quality distribution maps are available online.³</p> <p>Scotland:</p> <p>Air quality: In Scotland this is generally good, however this is not the case when considering the more urban areas. No exceedences of the annual mean PM₁₀ objective of 18μgm⁻³ at background locations were identified; however, 67 junctions were identified as exceeding the objective across Scotland, 60% of which were located in Glasgow Urban Area. With regard to NO₂ data from 53 sites utilising automatic monitoring are available for 2008. Fourteen roadside or kerbside automatic sites exceeded the AQS Objective for the annual mean (40μg^{m-3}) all of which are close to busy roads. Seven of these sites also exceeded the AQS Objective of 200μg^{m-3} for the hourly mean more than the permitted 18</p>	<p>References:</p> <ol style="list-style-type: none"> Defra, Environment in your Pocket Statistics, 2009, http://www.defra.gov.uk/evidence/statistics/environment/eiyp/ Health Protection Agency, Ionising Radiation Exposure of the UK Population: 2005 Review, http://www.hpa.org.uk/Publications/Radiation/HPARPDSeriesReports/HpaRpd001/ UK Air Quality Archive, www.airquality.co.uk/archive Joint Nature Conservation Committee (2006) Common Standards Monitoring for Designated Sites: First Six Year Report, http://www.jncc.gov.uk/pdf/CSM_06summary.pdf http://www.airquality.co.uk/annualreport/index.php http://www.scottishairquality.co.uk/reports.php?n_action=report2 Northern Ireland environmental statistics report 2010, www.doeni.gov.uk/northern_ireland_environmental_statistics_report_2010-2.pdf Air Pollution in Northern Ireland 2009, http://www.airqualityni.co.uk/reports.php?n_action=report http://www.scottishairquality.co.uk



times.

Provisional results from Scotland's network of automatic air quality monitoring stations in 2009 show that the UK Air Quality Strategy Objectives for carbon monoxide, benzene and 1,3-Butadiene have been met by the due dates. However, there remained a number of sites close to busy roads in urban areas that did not meet AQS Objectives for nitrogen dioxide and/or particulate matter as PM₁₀, together with several rural sites that did not meet the AQS Objective for ozone.⁹

Major sources of air pollution: AQMA's are predominantly in urban areas and are generally related to NO₂ and PM₁₀ emissions largely caused around urban areas provisionally through traffic activities.

Wales:

Air quality in Wales continues to improve year on year and both emissions and ambient concentrations of key pollutants are decreasing, though annual average concentrations across the country have started to level out in recent years.¹⁰

Urban air quality in Wales is generally worse than in rural areas. The main causes of pollution at urban sites are fine particles (PM₁₀) and ozone. The main cause of pollution in rural areas is the variation in ozone levels, which is affected by the weather.

In 2008, the number of days when air pollution was moderate or higher was 26 in Cardiff and in 2008 was 104 in Port Talbot Margam.¹⁰

UK Air Quality Strategy objectives have not been met, which has led to the declaration of 25 AQMA's in Wales (2008). The South-East Wales region has the worst air quality, followed by parts of north-east Wales.¹⁰

Moderate levels of ozone were recorded on 115 days during the year at one or more sites, and PM₁₀ levels were moderate or high on 47 days.¹⁰

Northern Ireland:

Northern Ireland's air quality has improved substantially in recent years. In particular, levels of pollutants associated with coal and oil combustion have reduced significantly over the past two decades. However, some pollutants in some parts of Northern Ireland continue to exceed air quality objectives.⁷

In 2008, the annual mean concentration of PM₁₀ in urban areas was 20.0µg/m³ and at the Lough Navar rural background monitoring site, it was 12.0µg/m³. In the last ten years, the rural concentration of PM₁₀ has been no higher than 15µg/m³ and the urban concentration has been less than 28µg/m³. All the readings in the last 10 years have been well below the 40µg/m³ level that has been set as the UK Air Quality objective for the protection of human health for PM₁₀.⁷ No exceedances of PM₁₀ objectives were identified in the most recent monitoring report for 2009. Of 18 sites automatically monitored for NO₂, 4 roadside or kerbside sites exceeded the AQS Objectives for NO₂ (annual mean of 40µg/m³), all of which are close to busy roads. One site also exceeded the AQS Objective of 200µg/m³ for the hourly mean more than the permitted 18 times.⁸

Results from Northern Ireland's network of automatic air quality monitoring stations in 2009 show that the UK Air Quality Strategy Objectives for carbon monoxide, benzene, 1,3-Butadiene, ozone and sulphur dioxide have been met.

Major sources of air pollution: AQMA's are predominantly in urban areas and are generally related to NO₂ and PM₁₀ emissions largely, from domestic fuel consumption and road transport.

MOD specific data:

The MoD's air quality effects are largely the result vehicle emissions from operational vehicles (green fleet), troop transport/business vehicles (white fleet), aircraft and shipping.¹¹

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Climate Change and Energy Use

National:

Total (final) energy consumption: 152.7 m tonnes oil equivalent in the UK (2009).¹

- Split between energy sources: petroleum; 47.5% natural gas; 30.5% electricity; 18%, others; 4% (includes coal, manufactured fuels, biomass, etc.).¹
- Average commercial and industrial electricity usage per customer: 0.079077 GWh in Great Britain (2007).²
- Average commercial and industrial gas usage per customer: 0.63377900 GWh in Great Britain (2007).²

Total carbon dioxide emissions: In 2009, UK net emissions of carbon dioxide (CO₂) were provisionally estimated to be 480.9 million tonnes.⁴ CO₂ accounts for around 85% of total UK greenhouse gas emissions.³ In 2009, 39% of CO₂ emissions were from the energy supply sector, 25% from road transport, 15% from business and 16% from residential fossil fuel use. In 2009, UK emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were provisionally estimated to be 574.6 million tonnes CO₂ equivalent. This was 8.6% lower than the 2008 figure of 628.3 million tonnes.⁴

All areas of the UK are getting warmer, and the warming is greater in summer than in winter.⁵

There is little change in the amount of precipitation (rain, hail, snow etc) that falls annually, but more is falling in the winter, with drier summers, for much of the UK.⁵ Sea levels are rising, and are greater in the south of the UK than the north.⁵

Current issues for energy and climate change: UK is experiencing sea level rise of approximately 1mm per year. Global sea-level is rising at about 3mm per year.⁸ Central England's temperature has risen by about 0.7 °C over the last century, with 2004 being the warmest on record.⁹ Sea-surface temperatures around the UK coast have risen over the past three decades by about 0.7 °C. Global average temperatures are rising at about 0.2 °C/decade. Severe windstorms around the UK have become more frequent in the past few decades, though not above that seen in the 1920s. Annual mean precipitation over England and Wales has not changed significantly since records began; however seasonal rainfall appears to be decreasing in summer and increasing in winter.⁸

Scotland:

Total (final) energy consumption: 13.6m tonnes oil equivalent in Scotland (2007).¹⁰

- Split between energy sources: petroleum 41.4%; natural gas 37.7%; electricity 18.3%; others 2.6% (includes coal, manufactured fuels, biomass, etc.).¹
- Average commercial and industrial electricity usage per customer: 0.090426 GWh in Great Britain (2007).²
- Average commercial and industrial gas usage per customer: 0.504155 GWh in Great Britain (2007).²

Total carbon dioxide emissions: In 2008, Scotland's net emissions of CO₂ were provisionally estimated to be 41 million tonnes.⁴ In 2008, 33.2% of CO₂ emissions were from the energy supply sector, 26.8% from road transport, 15% from business and 33.6% from residential fossil fuel use.¹⁰

In 2008 Scotland's emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were provisionally estimated to be 56.1 million tonnes CO₂ equivalent. This was 3% lower than the 2007 figure of 57.8 million tonnes.¹¹

Wales:

Total (final) energy consumption: 8.1m tonnes oil equivalent in Wales (2007).¹⁰

- Split between energy sources: petroleum 45.2%; natural gas 32.6%; electricity 17.6%; others 4.6% (includes coal, manufactured fuels, biomass, etc.).¹
- Average commercial and industrial electricity usage per customer: 0.075445 GWh in Wales

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Climate Change and Energy Use	
<p>(2007).²</p> <ul style="list-style-type: none"> • Average commercial and industrial gas usage per customer: 0.615,123 GWh in Wales (2007).² <p>Total carbon dioxide emissions: In 2008, Wales net emissions of CO₂ were provisionally estimated to be 32.4 million tonnes.⁴ CO₂ accounts for around 75.2% of total Wales greenhouse gas emissions.³ In 2008, 25% of CO₂ emissions were from the energy supply sector, 20.3% from road transport, 31.1% from business and 24.1% from residential fossil fuel use.¹⁰</p> <p>In 2007 Wales emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were provisionally estimated to be 39 million tonnes CO₂ equivalent. This was 7% lower than the 2006 figure.</p> <p>Northern Ireland:</p> <p>Total (final) energy consumption: 3.3m tonnes oil equivalent in Northern Ireland (2007).¹⁰</p> <ul style="list-style-type: none"> • Split between energy sources: petroleum; 92.6%others; 7.4% (includes coal, manufactured fuels, biomass, etc.).¹ • Average commercial and industrial electricity usage per customer: 0.079077 GWh in Great Britain (2007).² • Average commercial and industrial gas usage per customer: 0.63377900 GWh in Great Britain (2007).² <p>In 2008/09, 596 MWh of electricity in Northern Ireland was produced from renewable sources. This was equivalent to 7.3% of the total electricity consumption in that period.</p> <p>There has been a sizable increase in the amount of electricity produced from renewable sources since 2000/01, when only 118MWh (1.4% of total electricity consumed) was renewable.</p> <p>Total carbon dioxide emissions: In 2008, Northern Ireland net emissions of CO₂ were provisionally estimated to be 16.2 million tonnes.¹⁰ CO₂ accounts for around 85% of total UK greenhouse gas emissions.³ In 2009, 18.5% of CO₂ emissions were from the energy supply sector, 31.1% from road transport, 15.4% from business and 35.5% from residential fossil fuel use.¹⁰</p> <p>In 2008, Northern Irelands total greenhouse gas emissions accounted for 3.5% of the UK total.</p> <p>Since 1990, Northern Ireland's total greenhouse gas emissions have decreased by 11.2%. This is less than the reduction seen for the UK as a whole, which has seen a decrease of 19.5% on 1990 levels.</p> <p>MOD specific data:</p> <p>In 2008-09 the MOD produced 5.6 million tonnes of CO₂.⁹ Over 2007-08 1.9 million tonnes of CO₂ was from estate energy use; 4.1 million tonnes of CO₂ was from motive fuel use; and 0.1 million tonnes of CO₂ was from business travel. Of the 4.1 million tonnes of CO₂ from fuel use: 0.4 million tonnes CO₂ was from ground fuel; 0.8 million tonnes CO₂ was from marine fuel; and 2.9 million tonnes of CO₂ was from aviation fuel.⁷</p>	<p>Website, http://www.assemblywales.org/09-037.pdf</p>

Coastal Change and Flood Risk	
<p>National:¹</p> <p>Coastal erosion is occurring along 17% of the UK coastline with 30% of England's coastal length eroding. Of the regions in England, Yorkshire and Humber has the greatest proportion of coastal length which is eroding at 56% (203km). Coastal erosion is occurring along 30% to 32% of the South East, South West and East Midlands coastlines whilst 27% and 18% of the North East and North West coastlines respectively are eroding. The East Midlands has the smallest proportion of coastal length which is eroding at 9% or 21km.⁷</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Defra (2010) Measuring Progress - Sustainable Development Indicators 2010 2. Scottish Government, Flood Risk Responsibilities, http://www.scotland.gov.uk/Resourc/Doc/921/0052798.doc



Coastal Change and Flood Risk

In 2009, an estimated 2.7 million properties in England and Wales were in areas deemed to be at risk of flooding. Of these, some 580,000 were where the risk of flooding was greater than a 1 in 75 chance in any year. ('Risk' is the likelihood of flooding occurring given existing flood defences - not the extent to which flooding may cause damage).¹

Regionally, London has the highest number of people at risk from flooding. In the Greater London area there are 542,000 properties (around one million people) located in the floodplain. However, although London does have the largest number of people at risk, 458,000 of those properties at risk in London (84%) are in areas with a low chance of flooding. This is mainly due to the major flood defences and flood defence structures in the Thames Estuary, including the Thames Barrier, reducing the risk of tidal flooding. The 84,000 properties (16%) in London where the risks are significant or moderate are located on the tributaries of the River Thames in north and south London. On these rivers, such as the Lee, Brent and Ravensbourne, the risk is from fluvial, or river flooding, after heavy rainfall. The number of properties in areas with a significant chance of flooding are highest in the South East, which has 25,000 more properties (around 64,000 people) in this highest risk category compared with the South West. The South East also has the largest number of properties in areas with a moderate or significant chance of flooding, with 259,000 properties, or around 460,000 people. The City of Kingston-upon-Hull and East Riding in Yorkshire are the two local authorities with the highest number of properties with a chance of flooding. However, other local authorities, such as Boston and North Somerset, have a higher share of properties in areas of significant flood chance. For instance, Boston has about two-thirds of its properties in areas with a significant chance of flooding.⁹

Sea levels are rising, and are greater in the south of the UK than the north.⁵ The global-average sea level rose during the 20th century at an average rate of 1-2 mm/year, with some consensus on the larger value by the research community. The rate was larger (approximately 3mm/year) during the 1990s. UK sea level records are consistent with these values but with smaller trends observed in Scotland (where the land is uplifting) than in the south of the UK⁸.

Scotland:²

Coastal erosion is occurring along 12% of the Scottish coastline.⁷

In Scotland, an estimated 99,000 properties (around 3.9% of all properties) lie in areas at high to medium risk (i.e. areas where the risk of flooding is greater than a 1 in 200 annual probability) with 26,000 at risk from the sea and 73,000 at risk from rivers.²

Wales:³

Coastal erosion is occurring along 23% of the Welsh coastline.⁷

220,000 properties in Wales are at risk from river and sea flooding of which 64,000 are at significant risk (greater than a one in 75 chance in any year). Across the local authorities in Wales, Cardiff has the highest numbers of properties at risk from flooding from rivers or the sea. However, many of these are at low risk (less than one in 200 chance in any given year), mainly because of the flood defence structures in place in Cardiff. Although Cardiff is well defended, if these defences were to be overtopped then the consequences could be severe. Conwy has the largest number of properties at significant risk (greater than a 1 in 75 chance in any given year). This is largely because of the coastal flood risk. Coastal flooding is also the cause of the significant risk to property in Gwynedd and Newport.¹⁰

Northern Ireland:⁴

Coastal erosion is occurring along 20% of Northern Ireland's coastline.⁷

It is estimated that some 60,000 properties in NI are at risk from flooding from an event with a one in 100 chance of occurrence in any one year. Nearly 14,000 of these are situated within the Greater Belfast Area.

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Material Assets (Transport)

National:

Principal roads: The UK has a network of Motorways and A-roads with provide good connectivity between regions and urban centres. Urban centres are served by 'dense and inter-twined road networks' reflecting the historic development these intra urban road links. ¹ There was a significant decrease in heavy goods vehicle activity in 2009, with the amount of goods moved decreasing by 13 per cent from the 2008 level to 132 billion tonne kilometres, the amount of goods lifted decreasing by 18 per cent to 1,422 million tonnes and vehicle kilometres decreasing by 11 per cent to 18.8 billion vehicle kilometres (11.7 billion vehicle miles). ²

In 2009, the overall motor vehicle traffic volume in Great Britain was 313.2 billion vehicle miles, down by 3.0 billion vehicle miles from last year. ³

Principal rail lines: The UK has a network of main line rail connections with plans to improve capacity and track speeds. The volume of freight transported by rail has increased from 16.9 billion tonne kilometres in 1997 to 20.6 billion tonne kilometres in 2008/9. ⁷ Over the last 10 years, the percentage of domestic freight being transported by rail increased by one percentage point (up to 8% of total freight movements). However, over the past 55 years rail freight volumes have generally been in decline to 57% of those seen in 1953. ⁷

Principal airports: There are 30 'major' airports in the UK. In 2008 there were 2,327,000 air traffic movements in Great Britain. Major UK airports include Heathrow, Gatwick, Stansted, East Midlands, Manchester, Glasgow, Aberdeen and Belfast. ⁵

Principal ferry ports: Major UK sea ports include: Sullom Voe; Forth; Tees and Hartlepool; Hull; Grimsby and Immingham; Felixstowe; Harwich; London; Ramsgate; Dover; Portsmouth; Southampton; Milford Haven; Holyhead; Liverpool. ⁸ In 2009, 107 million tonnes of domestic freight was moved by water. In the last 10 years the amount of domestic freight transported by water has remained relatively constant at around 50 billion tonne kilometres which represents approximately 20% of the domestic freight movements. ⁶

Capacity or congestion issues: Changes in the UK's rural/urban demographic have resulted in greater traffic volumes around certain urban hubs than those links were originally designed for. Congestion in towns and cities, and on some parts of the strategic road network, has become an ever increasing issue of importance. ¹ Improvements to the rail network are helping to alleviate congestion on road networks. ⁷

Travel to work distance: UK average of 9.7 kilometres for women and 16.6 kilometres for men. UK average time to travel to work of 22 minutes for women and 28 minutes for men (1999-2001 data). ⁹

Current issues for transport: Half a million packages of radioactive materials are shipped within the UK each year, with the MoD making up only a very small proportion of these movements. The Low Level Waste (LLW) Repository at Drigg in Cumbria receives between 500 and 700 half-height ISO containers of LLW per year, predominantly by rail. ¹¹

Scotland:

Principal roads: There were 55,838 kilometres of public road in Scotland on 1 April 2008. Unclassified roads accounted for almost half the road network - 26,446 km. There were 36,189 km of roads with a speed limit of over 40 mph - about two-thirds of the total network.

The length of motorway (excluding slip roads) has risen from 369 km in 1998 to 391 km in 2008. Between 1998 and 2008 the total length of the public road network increased by 1,849 km (three per cent), from 55,325 km in 1998 to 55,838 km in 2008, mainly due to a rise of 1,413 km in the total length of unclassified roads with a speed limit of up to 40 mph ²¹.

Principal rail lines: Scotland's rail network has around 340 railway stations and 3,000 kilometres of track; over 81 million passenger journeys are made on the network each year ²⁶.

Rail freight has increased slightly from the mid-1990s "all-time low", to around 9-14 million tonnes in recent years ²². ScotRail passenger numbers totalled 83.9 million in 2008/09, an increase of three per cent from the previous year, a 44 per cent rise since 1998/99 and a rise of 68 per cent since 1992/93 when records began. In the 2008 Scottish Household Survey, 91% agreed that the trains were on time, 83% agreed that services ran when the person needed them, and 55% agreed that the fares were good value. ²³

Principal airports: There were 24.3 million air terminal passengers in 2008, around 0.8 million (three

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Material Assets (Transport)

per cent) less than the previous year and the third highest level ever recorded. There has been almost continuous growth from 1.2 million in 1960, with increases in all but six of the years since then. In 2008, more than half the passengers who used Scottish airports were travelling to or from other UK airports - principally London Heathrow (3.1 million), Gatwick (1.6 million), Stansted (1.2 million), Luton (0.9 million), Belfast (0.8 million) and Birmingham (0.9 million). International passenger numbers were greatest for flights to/from Amsterdam (1.1 million), Dublin (0.9 million) and Paris, Charles de Gaulle (0.5 million)²⁴.

Principal ferry ports: In 2008 there were 6.785 million passengers within and to and from Scotland. The most heavily-used routes were: Wemyss Bay - Rothesay (741,000); Largs - Cumbrae (711,000); Ardsrossan - Brodick (707,000); Oban - Craignure (554,000) and Gourock - Dunoon (551,000). There were 1.9 million passenger journeys between Scotland and Northern Ireland in 2008: 1.1 million on the Stranraer - Belfast route, 628,000 on Cairnryan - Larne and 206,000 on Troon - Larne. The service between Troon and Belfast was withdrawn in December 2004. The numbers of cars carried on these routes (in 2008) were: 239,000 for Stranraer - Belfast ; 154,000 for Cairnryan - Larne and 59,000 for Troon - Larne.

The tonnages lifted in Scotland by coastal shipping when measured in "tonne-kilometres" shipping is around 14-17 billion²⁵.

Wales:

Principal roads: The total road length in Wales in 2009 was 34,164 km. Unclassified minor surfaced roads contribute approximately half the total road length in Wales. The greatest length of motorway is in Newport, which accounts for 19 per cent of the total motorway in Wales. In 2009, 4.3 per cent of the motorway network and 5.8 per cent of the trunk road network required close monitoring of structural condition compared with 4.6 per cent and 6.2 per cent respectively in 2008.¹³

It is estimated that the volume of motor vehicle traffic on all roads in Wales in 2008 was similar to that in 2007. The volume of traffic has however grown by almost 14 per cent since 1999. Traffic on minor roads accounted for 37 per cent of all traffic. Traffic on motorways accounted for 12 per cent of all road traffic during 2008.¹⁴

Principal rail lines: There were approximately 25.3 million rail passenger journeys which either started or ended in Wales in 2008-09, an increase of 6 per cent compared to the previous year. During 2008-09, Cardiff was the destination of almost two-fifths (39 per cent) of rail passenger journeys within Wales.¹⁷

Principal airports: There is only one domestic airport within Wales which is Cardiff Airport. In 2009 aircraft movements at Cardiff International Airport were 27 per cent fewer than in 2008. The total number of passengers using Cardiff International Airport decreased by 18 per cent in 2009 to 1.63 million.¹⁵

Principal ferry ports: In 2008 there were 8,605 ship arrivals in Wales. This number has been in decline for the last five years with a reduction over the period of 22 per cent. There are 10 principal ferry ports in Wales with two of these accounting for 2/3 of the ship arrivals in Wales, namely Milford Haven and Holyhead. In 2008 there were over 55 million tonnes of goods and foreign and domestic traffic in ports in Wales.¹⁵

Travel to work distance: The National Travel Survey (NTS) estimates that on average around 1,000 trips are made in Wales, per person, per year, with people travelling an average distance of almost 140 miles a week. Approximately seven out of ten trips are made in either a car or a van. According to the Labour Force Survey more than four out of five people use a car, van, or minibus as their main mode of travel to work, with a further one in ten people choosing to walk.

The Living in Wales survey shows more than half of employed respondents, who are living in households with an annual gross household income of less than £20,800 (£400 per week), live within three miles of their place of work. Results from the NTS show that within 15 minutes journey time either on foot or by public transport, four out of five households have access to a doctor, nine out of ten households have access to a grocer, half of all households have access to a shopping centre, and almost one in five households have access to a hospital. NTS results show that one fifth of respondents travel on a local bus at least once a week, but conversely more than half of respondents never travel on a local bus, or use it less than once a year.¹⁸

Current issues: It is estimated that the volume of motor vehicle traffic on all roads in Wales in 2008 was similar to that in 2007. The volume of traffic has however grown by almost 14 per cent since 1999.

Road lengths Chapter 1, <http://wales.gov.uk/docs/statistics/2009/091027wts2009ch1ency.pdf>

14. Welsh Transport Statistics, Road Traffic chapter 7, <http://wales.gov.uk/docs/statistics/2009/091110wts2009ch7ency.pdf>

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17. Welsh Transport Statistics Rail Transport Chapter 9, <http://wales.gov.uk/docs/statistics/2010/101006wts2009ch9ency.pdf>

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Material Assets (Transport)

Traffic on motorways accounted for 12 per cent of all road traffic during 2008.¹⁸ During 2008, vehicle insurance offences accounted for almost one-quarter (24 per cent) of all motoring offences proceedings at magistrates' courts¹⁹. Three per cent of motorways and 5.8 per cent of trunk roads require close monitoring of their structural condition in 2009, a small reduction on 2008. Four per cent of Local Authority principal roads and eight per cent of non principal/classified roads were in need of further investigation of their structural condition in 2008/09²⁰.

Northern Ireland:

Principal roads: 2010 there were 25,247 kilometres of public road in Northern Ireland. Unclassified roads accounted for the largest proportion of all roads (60%) followed by C roads (19%), B roads (11%), A roads (9%) and Motorways (<1%). Analysis of the urban/rural split of the road network reveals that 21% of road lengths are urban (speed limit of 40 mph or less) and 79% are rural (speed limit of more than 40 mph). This varies between the different road types with C roads having the highest proportion of rural road length (94%) and unclassified roads having the lowest proportion of rural road length (73%). During 2009, 57.4 million tonnes of freight were lifted within Northern Ireland and transported by road in goods vehicles weighing over 3.5 tonnes, a decrease of 16% from 2008. Crude minerals (e.g. sand, gravel) were the greatest single commodity transported within Northern Ireland and accounted for 16.5 million tonnes, 29% of all tonnes moved.¹²

Principal rail lines: Northern Ireland has 211 route miles of track and 22 stations. During 2009-10, there were 10.0 million rail passenger journeys made, a decrease of 2% from 2008-09. Railway passenger receipts also decreased, from £29.0 to £28.5 million, a decrease of 2%.¹²

Principal airports: Between 2008 and 2009, air transport movements at Belfast International Airport decreased by 18%, George Best Belfast City Airport decreased by 6% and City of Derry Airport decreased by 28%. In 2009, Belfast International Airport accounted for 51% of all air transport movements, George Best Belfast City Airport 44% and City of Derry Airport 5%. Of the 85,849 air transport movements occurring during 2009, 92% were scheduled and 8% were chartered. During 2009, 7.5 million terminal passengers passed through Northern Ireland airports, representing a decrease of 9% on the 2008 figure.¹²

Principal ferry ports: There are three major ports in Northern Ireland namely, Belfast, Larne and Warrenpoint which saw 2.2 million sea passengers travelled between Northern Ireland and Great Britain ports during 2009 with an additional 19,000 travelling by sea between Northern Ireland and the Isle of Man.¹²

In 2009 the most frequently used method of travel to work in Northern Ireland was car, van or minibus, with 86% of the workforce interviewed in October to December using these methods. This compares to 71% in the United Kingdom as a whole.¹²

MOD specific data:

As of 2010, the MOD has the freehold to 1,000Ha of Naval Base land,¹⁰ principally at Faslane, Coulport and Marchwood. The Naval Bases at Portsmouth and Devonport are now largely contractor-owned. This has decreased from 1,400Ha in 1997 and is set to reduce further as a result of the SDSR.

25. Scottish Transport Statistics, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Transport-Travel/TrendWaterwaysPipeline>
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Material Assets (Waste Management)

National:

Waste management facilities: There are 3 LLW disposal sites within Great Britain; the main national repository is the LLW Repository near Drigg, in England. Further LLW disposal sites are at Dounreay and Clifton Marsh. Radioactive waste is managed on 36 sites in the UK, the majority of which are in England. There are 26 sites in England, including 7 sites owned by the MoD.

Radioactive waste arisings: The total volume of radioactive waste from all sources in the UK was estimated to be 290,230m³ (total stocks of High Level Waste (HLW), Intermediate Level Waste (ILW) and Low Level Waste (LLW) at April 2007). Radioactive waste is classified by the level of radioactivity

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2. BERR, <http://www.berr.gov.uk/energy/sources/nuclear/key-issues/waste/mrws/page47832.html>



Material Assets (Waste Management)

of the material. LLW accounts for 93% of UK arisings, ILW for 7% of UK arisings and HLW for <0.05% of UK arisings. The majority of radioactive waste in the UK is in England; an estimated 268,430m³ (total stocks of HLW, ILW and LLW at April 2007), 91% of which is LLW, 9% is ILW and 0.04% is HLW.¹

Low Level Waste (LLW): LLW is defined as waste that does not exceed specified levels of radioactivity (below 4 GBq/tonne of alpha or 12 GBq/tonne of beta-gamma activity). Overall, the major components of LLW are building rubble, soil and steel items such as framework, pipework and reinforcement from the dismantling and demolition of nuclear reactors and other nuclear facilities and the clean up of nuclear sites. However, at the present time most LLW is from the operation of nuclear facilities, and this is mainly paper, plastics and scrap metal items. Most LLW is sent to the LLWR near Drigg in Cumbria or in certain cases to specific landfill sites soon after it is produced. About 93% (3,200,000m³) of radioactive waste falls into the LLW category.¹

Intermediate Level Waste (ILW): ILW is defined as wastes exceeding the upper boundaries for LLW that do not generate sufficient heat for this to be taken into account in the design of waste storage or disposal facilities. The major components of ILW are metal items such as nuclear fuel casing and nuclear reactor components, graphite from reactor cores, and sludges from the treatment of radioactive liquid effluents. ILW is stored in tanks, vaults and drums, with most waste requiring concrete to shield operators from the radiation. About 7% (about 240,000m³) of radioactive waste is in the ILW category.¹

High Level Waste (HLW): HLW is defined as wastes in which the temperature may rise significantly as a result of its radioactivity, so this factor has to be taken into account in the design of waste storage or disposal facilities. Initially HLW comprises nitric acid solutions containing the waste products of reprocessing spent nuclear fuels. HLW is stored as liquid in water-cooled, stainless steel tanks or as vitrified glass blocks, and needs thick concrete walls to shield operators from the high radiation. Less than 0.1% (1,100m³) is in the HLW category.¹ HLW does not include spent fuels or nuclear materials themselves; these are held in long-term storage and are not classified as wastes.

At present there are no facilities in the UK for disposing of LLW not suitable for near-surface disposal, ILW and HLW – and these wastes are currently stored.² Managing Radioactive Waste Safely (MRWS) is the process to identify and implement long-term management solutions for the UK's higher-activity radioactive waste. As part of the MRWS programme the Government set up the independent Committee on Radioactive Waste Management (CoRWM). In 2006, CoRWM recommended that geological disposal, coupled with a programme of robust, safe and secure interim storage until a disposal facility is available, would be the best approach for managing the UK's inventory of legacy higher activity radioactive waste. In 2007 CoRWM was reconstituted to provide independent scrutiny on the Government's and Nuclear Decommissioning Authority's (NDA) proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long-term management option for the UK's higher activity wastes. In June 2008, UK Government, in conjunction with the devolved administrations for Wales and Northern Ireland (not Scotland), published a White Paper setting out the framework for managing higher-activity radioactive waste in the long-term through geological disposal, coupled with safe and secure interim storage and ongoing research and development to support its optimised implementation.²

Non-radioactive waste arisings: In 2004, total UK waste arisings were around 335 million tonnes. Of this 32% was construction and demolition waste; 29% was mining and quarrying waste; 13% was industrial waste; 12% was commercial waste; 9% was household waste; 5% was dredging waste; and agricultural and sewage wastes made up for less than 1% each. Commercial and industrial waste arisings were therefore around 0.84 million tonnes in 2004. In 2007, 73 million tonnes of waste were sent to landfill (a decrease of 19.5% since 2002). The amount of waste recycled or composted has increased accounting for 34% of waste in 2007/08.⁴

In 2002, 41% of commercial and industrial waste arisings were landfilled; 33% were recycled; 9% were reused; 4% were treated; 4% were thermally treated; 4% were unrecorded; 3% went to land recovery; 2% were transferred; and 1% was unsampled.⁵

Total waste arisings in England were estimated to be around 272,000,000 tonnes in 2004. Of this 32% was construction and demolition waste; 30% was mining and quarrying waste; 13% was industrial waste; 11% was commercial waste; 9% was household waste; 5% was dredged material; and agricultural and sewage wastes made up for less than 1% each.³ In 2007, 73,000,000 tonnes of waste (household, commerce & industry, and construction & demolition) was sent to landfill (a decrease of 19.5% since 2002).⁴

3. [Waste Strategy for England 2007](http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf), Defra, <http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf>
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9. [Scottish Government Higher Activity Waste Policy](http://www.scotland.gov.uk/Topics/Environment/waste-and-pollution/Waste-1/16293/higheractivitywastepolicy), <http://www.scotland.gov.uk/Topics/Environment/waste-and-pollution/Waste-1/16293/higheractivitywastepolicy>
10. [Scotland's Zero Waste Plan Data](http://www.sepa.org.uk/waste/waste_data/zero_waste_plan_data.aspx), Scottish Environment Protection Agency, June 2010, http://www.sepa.org.uk/waste/waste_data/zero_waste_plan_data.aspx
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12. [Wales Waste Information 2008](http://www.environment-agency.gov.uk/research/library/data/111408.aspx), Environment Agency, <http://www.environment-agency.gov.uk/research/library/data/111408.aspx>
13. [Towards Zero Waste: and Waste Strategy Progress Report 2002-2008](http://wales.gov.uk/docs/desh/publications/100730wasteprogresen.pdf), Welsh Government, June 2010, <http://wales.gov.uk/docs/desh/publications/100730wasteprogresen.pdf>
14. Commercial and Industrial



Material Assets (Waste Management)

Commercial and industrial waste arisings in England were estimated to be around 67,900,000 tonnes in 2002/2003. At that time, 41% of commercial and industrial waste arisings were landfilled; 33% were recycled; 9% were reused; 4% were thermally treated; and 2% was recovered by other means.⁶

Hazardous waste arisings: In 2009, total UK hazardous waste arisings were 4,437,212 tonnes, of which 4,095,477 tonnes was produced in England.⁷

Current issues for waste management: Commercial and industrial waste data is not routinely collated (Defra intend to carry out a national survey of commercial and industrial waste by the end of 2010). However it is subject to similar pressures as municipal waste, namely increased waste prevention, adoption of recycling and reuse alternatives and reduced reliance on landfill.

Scotland:

Waste management facilities: Radioactive waste is managed at 7 sites in Scotland, which includes the MoD sites at HMNB Clyde, Rosyth and Vulcan support the UK's naval nuclear propulsion programme.¹ A contract is expected to be awarded for the development of a new LLW disposal facility at Dounreay in 2011.⁶

Radioactive waste arisings: The total predicted volume of radioactive waste from all sources in Scotland is estimated to be 429,500m³ (lifetime total once all LLW and ILW are packaged. 90% of radioactive waste arisings in Scotland is LLW and 10% is ILW. No HLW is managed in Scotland.¹

At present there are no facilities in Scotland for disposing of LLW and ILW - these wastes are currently stored.² The Scottish Government currently supports long-term interim storage of radioactive waste and therefore did not sponsor the MRWS White Paper. The Scottish Government is currently developing a detailed policy statement intended to enable waste producers to manage radioactive wastes arising from nuclear sites in Scotland.⁸

Non-radioactive waste arisings: In 2008, waste arisings in Scotland totalled 19,515,392 tonnes (controlled waste arisings). Of this, 15% was household waste; 41% was commercial & industrial waste; and 44% was construction & demolition waste. A total of 6,112,198 tonnes of Scottish waste was sent to landfill in 2008 (a decrease of 1,221,240 tonnes since 2007).⁹

Commercial and industrial waste arisings in Scotland were estimated to be around 7,945,915 tonnes in 2008. Of a recorded 4,873,501 tonnes of commercial and industrial waste, 46% of this waste was landfilled; 5% was incinerated; 46% was recycled; and 3% was composted.⁹

Hazardous waste arisings: In 2009, 104,001 tonnes of hazardous waste was produced in Scotland.⁷

Current issues for waste management: The need to reduce waste arisings through sustainable design, increasing resource efficiency, re-use and recycling, and recovering value from products, and to divert as much waste from landfill as possible.¹⁰

Wales:

Waste management facilities: Radioactive waste is managed at 3 sites in Wales, the NDA Magnox reactor station sites at Trawsfynydd and Wylfa – the former is shut down and being decommissioned, the latter is operational; and GE Healthcare's Maynard Centre at Cardiff.⁶

Radioactive waste arisings: The total predicted volume of radioactive waste from all sources in Wales is estimated to be 125,900m³ (lifetime total once all LLW and ILW are packaged. Approximately 83% of radioactive waste arisings in Wales is LLW and 17% is ILW). No HLW is managed in Wales.¹

At present there are no facilities in Wales for disposing of LLW and ILW – these wastes are currently stored and transported to the repository in Drigg, England.² The Welsh Assembly Government support CoRWM recommendations that geological disposal, preceded by safe and secure interim storage, is the best approach for the long-term management of higher activity radioactive wastes.

Non-radioactive waste arisings: In 2008, waste arisings in Wales totalled 7,200,000 tonnes. At that time, a total of 2,968,000 tonnes of waste was sent to landfill (a decrease of 1,409,000 tonnes since 1998/1999).¹¹

Commercial and industrial waste arisings in Wales were estimated to be around 3,573,000 tonnes in 2007. At that time, 49% of commercial and industrial waste was recycled, composted or reused; 1% was incinerated; and 39% was landfilled.¹²

Waste Arisings Survey 2004/05, Environment and Heritage Service, March 2007, <http://www.ni-environment.gov.uk/cijustreport.pdf>

15. 'Our Environment, Our Heritage, Our Future' State of the Environment Report for Northern Ireland, Department of the Environment, March 2008, http://www.ni-environment.gov.uk/index/about-nea/state_of_the_environment/state_of_the_environment_report.htm

16. Sustainable Development Report and Action Plan, Ministry of Defence, 2009, <http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipprt200809v7.pdf>



Material Assets (Waste Management)

Hazardous waste arisings: In 2009, 209,701 tonnes of hazardous waste was produced in Wales.⁷

Current issues for waste management: The need to reduce waste production, by maximising recycling, minimising the amount of residual waste produced and achieving as close to zero landfill as possible.¹²

Northern Ireland:

Waste management facilities: There are currently no nuclear licenced sites in Northern Ireland; only very small quantities of radioactive waste are produced from hospitals and industry.⁶

Radioactive waste arisings: There are no major radioactive waste producer sites in Northern Ireland.⁶ The Department of the Environment Northern Ireland supports CoRWM recommendations that geological disposal, preceded by safe and secure interim storage, is the best approach for the long-term management of higher activity radioactive wastes.

Non-radioactive waste arisings: In 2005/ 6, waste arisings in Northern Ireland totalled 1,063,510 tonnes.

Total commercial and industrial waste arisings for Northern Ireland in 2004/05 were estimated to be around 1,560,371 tonnes.¹³ A large proportion of commercial and industrial waste is suitable for recycling and recovery, however historically this material has been disposed of to landfill. The amount of commercial and industrial waste estimated to have been landfilled in 2004/05 was 64% (equivalent to 998,200 tonnes). In 2004/05 24% of commercial and industrial waste produced (equivalent to 379,817 tonnes) was recycled.¹⁴

Hazardous waste arisings: In 2009, 10,733 tonnes of hazardous waste was produced in Northern Ireland.⁷

Current issues for waste management: The continuing increase in the amount of waste produced in Northern Ireland due to economic and population growth, and the need to comply with the limits posed by the Landfill Directive. The need to address waste prevention therefore remains a priority.¹⁴

MOD specific data:

Radioactive waste is managed on 7 sites owned by the MoD, which undertake operations in support of the atomic weapons programme (Aldermaston), the nuclear submarine propulsion programme (Barrow-In-Furness, Derby and Her Majesty's Naval Base (HMNB) Devonport) and other activities (Donnington, Eskmeals and HMNB Portsmouth).¹

The MoD is estimated to account for around 2% of total LLW arisings in the UK.¹ In 2008/09 the MOD recycled and reused 51% of its total 177,000 tonnes of waste.¹⁴

Material Assets (Land Use and Materials)

National:

Total area: The UK covers an area of 2,472,900 hectares (242,514km²). England comprises the largest land area in the UK, covering an area of 13,028,100 hectares (130,281km²). The smallest land area in the UK is Northern Ireland, which covers an area of 1,357,600 hectares (13,576km²).¹

Major land uses: In 2007 the UK had the following land cover:²

UK Land Cover 2007	'000s ha	% area
Broadleaved, Mixed and Yew Woodland	1,488	6.0
Coniferous Woodland	1,380	5.6
Linear Features	527	2.1
Arable and Horticulture	4,657	18.8
Improved Grassland	5,067	20.5

References:

- Office of National Statistics, http://www.statistics.gov.uk/geography/uk_countries.asp
- Countryside Survey 2007, <http://www.countryside.gov.uk/reports2007.html>
- Previously Developed Land that may be Available for Development: Results from the 2008 National Land Use Database of Previously-Developed Land in England, Homes and Communities Agency, February 2010, <http://www.homesandcommuniti>



Material Assets (Land Use and Materials)

Neutral Grassland	2,407	9.7
Calcareous Grassland	59	0.2
Acid Grassland	1,599	6.5
Bracken	263	1.1
Dwarf Shrub Heath	1,360	5.5
Fen, Marsh, Swamp	439	1.8
Bog	2,393	9.7
Standing Open Waters	265	1.1
Rivers and Streams	64	0.3
Montane	42	0.2
Inland Rock	106	0.4
Built-up Areas and Gardens	1,397	5.6
TOTAL	24,729	100

Average population density of UK: 247 people per km² (385 people per km² in England).¹

Major land uses: In 2007 England had the following land cover:²

England Land Cover 2007	'000s ha	% area
Broadleaved, Mixed and Yew Woodland	981	7.4
Coniferous Woodland	257	1.9
Boundary and Linear Features	353	2.7
Arable and Horticulture	4,002	30.4
Improved Grassland	2,856	21.7
Neutral Grassland	1,453	11.0
Calcareous Grassland	30	0.2
Acid Grassland	396	3.0
Bracken	91	0.7
Dwarf Shrub Heath	331	2.5
Fen, Marsh and Swamp	117	0.9
Bog	140	1.1
Standing Open Water and Canals	97	0.7
Rivers and Streams	29	0.2
Built-up Areas and Gardens	1,038	7.9
Other land	580	4.4
Unsurveyed Urban Land	428	3.5
TOTAL	13,180	100

In 2008, there was an estimated 63,750 hectares of previously-developed land in England, up from 2.6% from 62,130 hectares in 2007. An estimated 32,400ha of previously-developed land was vacant or derelict, 51% of the total. The remaining 31,350ha was in use but with potential for redevelopment.³ Current land use issues: There is currently increasing pressure on rural and agricultural land from developers as urban areas expand.

Scotland:

Total area: Scotland covers an area of 7,792,500ha (77,925km²).¹

Average population density of Scotland: 65 people per km².¹

Major land uses: In 2007 Scotland had the following land cover:²

4. es.co.uk/nlud-pdl-results-and-analysis.htm
5. Scottish Vacant and Derelict Land Survey 2009, Scottish Government, January 2010, <http://www.scotland.gov.uk/Publications/2010/01/26135819/0>
6. Getting the Best from Our Land: A Draft Land Use Strategy for Scotland, January 2010, <http://www.scotland.gov.uk/Topics/Environment/Countryside/Landusestrategy>
7. Environment Strategy for Wales, Welsh Assembly Government, May 2006, <http://wales.gov.uk/topics/environmentcountryside/epg/envstrat/orwales/strategy/?lang=en>
8. Northern Ireland Countryside Survey 2007, Northern Ireland Environment Agency, 2009, http://www.ni-environment.gov.uk/nics2007_broad_habitat_change_1998-2007.pdf
9. 'Our Environment, Our Heritage, Our Future' State of the Environment Report for Northern Ireland, Department of the Environment, March 2008, http://www.ni-environment.gov.uk/index/about-niea/state_of_the_environment/state_of_the_environment_report.htm
10. MOD Sustainable Development Report and Action Plan 2008 <http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/SSDCD/SustainableDevelopmentPolicy/SustainableDevelopmentStrategyReportsAndActionPlans.html>
11. MOD, Stewardship Report on the Defence Estates, 2008-09, <http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshiprpt200809v7.pdf>



Material Assets (Land Use and Materials)

Scotland Land Cover 2007	'000s ha	% area
Broadleaved, Mixed and Yew Woodland	251	3.1
Coniferous Woodland	956	11.9
linear Features	95	1.2
Arable and Horticulture	534	6.6
Improved Grassland	907	11.2
Neutral Grassland	461	5.8
Calcareous Grassland	26	0.3
Acid Grassland	983	12.3
Bracken	132	1.6
Dwarf Shrub Heath	894	11.1
Fen, Marsh, Swamp	239	3.0
Bog	2,044	25.6
Standing Open Waters	89	1.1
Rivers and Streams	21.3	0.3
Built-up Areas and Gardens	153	1.9
Other land	74	0.9
Unsurveyed Urban Land	38	0.5
TOTAL	8,012	100

In 2009, there was an estimated 10,863 hectares of derelict and urban vacant land in Scotland, of which 2,640 hectares (24%) were urban vacant and 8,224 hectares were derelict (76%).⁴

Current land use issues: The effects of changes in climate, lifestyles, settlement patterns, infrastructure requirements and the impacts of global markets on land uses, which place pressures on space and affects land use change. More than 80% of Scotland's population live in urban areas, and yet only 6% of land in Scotland is urban; this leads to a high monetary value being placed on urban land. There are also only relatively small areas of prime agricultural land in Scotland.⁵

Wales:

Total area: Wales covers an area of 2,073,200ha (20,732km²).¹

Average population density of Wales: 141 people per km²

Major land uses: In 2007 Wales had the following land cover:²

Wales Land Cover 2007	'000s ha	% area
Broadleaved, Mixed and Yew Woodland	174	8.2
Coniferous Woodland	106	5
Linear Features	48	2.2
Arable and Horticulture	73	3.4
Improved Grassland	730	34.4
Neutral Grassland	263	12.4
Calcareous Grassland	1.2	0.1
Acid Grassland	211	9.9
Bracken	37	1.8
Dwarf Shrub Heath	117	5.5
Fen, Marsh, Swamp	36	1.7
Bog	48	2.3
Standing Open Waters	5	0.3
Rivers and Streams	6	0.3
Montane	0.1	0.004



Material Assets (Land Use and Materials)

Inland Rock	8	0.4
Built-up Areas and Gardens	132	6.2
Other Land	111	5.2
Unsurveyed Urban Land	15	0.7
TOTAL	2,121	100

Current land use issues: A key priority is the conservation and enhancement of land, developing in a sustainable and equitable way for the long term benefit of future generations, in particular considering the impact of climate change on land change. The very small proportion of land that is classified as 'best and most versatile' agricultural land in Wales makes it important to conserve it.⁶

Northern Ireland:

Total area: Northern Ireland covers an area of 1,357,600ha (13,576km²).¹

Average population density of Northern Ireland: 125 people per km².¹

Major land uses: In 2007 Northern Ireland had the following land cover:⁷

Northern Ireland Land Cover 2007	ha	% area
Broadleaved/Mixed and Yew Wood	81,699	5.77
Coniferous Woodland	60,617	4.28
Roads, Tracks and Hard Verge	30,951	2.19
Arable and Horticulture	48,917	3.46
Improved Grassland	573,010	40.47
Neutral Grassland	231,116	16.32
Calcareous Grassland	1,802	0.13
Acid Grassland	10,369	0.73
Bracken – Dense	2,645	0.19
Heath (Dwarf Shrub)	16,751	1.18
Fen, Marsh and Swamp (Wetland)	47,255	3.34
Bog	160,902	11.36
Standing Open Water (Waterbodies)	61,332	4.33
Rivers and Streams	5,495	0.39
Montane*	<735	/
Inland Rock	5,450	0.39
Urban/Built-up Areas	74,098	5.23
Supralittoral Rock	1,581	0.11
Supralittoral Sediment	1,995	0.14
TOTAL	1,415,986	100

* Montane has not yet been surveyed, although the area of habitat is thought to be no greater than 735ha (the area of the land classification stratum in which it is located).

Current land use issues: The main pressure on land is development (including housing, industrial and recreational), infrastructure, extraction industries, agriculture and forestry, and tourism. Considerable new housing development has taken place on urban fringes as well as towns and villages. The sustainable management of land use change is a key priority. There is a need to move towards redevelopment of brownfield sites in order to relieve pressure on the development of Greenfield (previously undeveloped land).⁸

MOD specific data:

The MoD is the third largest landowner in the UK with a diverse estate of some 238,000 hectares (1% of the UK mainland) valued at some £15.3 billion.¹⁰ 79% of this is in England, 11% in Scotland, 9% in



Material Assets (Land Use and Materials)

Wales and 1% in Northern Ireland.¹⁰

Since 2003 the MOD delivered 35,000 modernised Single Living Accommodation bed spaces it is anticipated that a further 21,000 bed spaces will be delivered by 2013, a total of 56,000 overall.¹⁰

The MOD's built estate covers approximately 80,000 hectares, with at least 45,000 buildings (including single living units) and approximately 52,000 houses. The MOD owns or manages an overall stock of 70,000 houses worldwide and 160,000 single living units, spread across more than 200 sites in 16 countries.^{9, 10}

Cultural Heritage

National:

Number of Scheduled Monuments: No UK wide data. 19,717 in England.¹

Number of listed buildings: No UK wide data. 374,081 in England (this relates to entries).¹

Number of conservation areas: No UK wide data. 9,080 in England.¹

Sites currently at risk: No UK wide data. 19,446 in England.¹

Other important sites: The UK has 28 World Heritage Sites³. England has 43 registered historic battlefields; and 46 designated wrecks.¹

Scotland:

Number of Scheduled Monuments: 8,089 in Scotland.²

Number of listed buildings: In excess of 47,000.⁹

Number of conservation areas: In excess of 600.⁹

Sites currently at risk: 2,360.¹³

Other important sites: Scotland has five World Heritage Sites and more than 275 sites listed in the Inventory of Historic Parks, Gardens and Designed Landscapes.⁹

Wales:

Number of Scheduled Monuments: 4,111.¹⁰

Number of listed building: 29,889.¹⁰

Number of conservation areas: 519.¹⁰

Sites currently at risk: A 2008 report for Cadw found that for a sample percentage of Listed Buildings in Wales, 9.6% were classed as being 'at risk'.¹⁰

Other important sites: Wales has two World Heritage Sites and a third site (the Pontcysyllte Aqueduct and Canal System) is being put forward for consideration. Wales also has a total of 386 registered parks and gardens, 127 monuments in state care and six designated historic wrecks.¹⁰

Northern Ireland:

Number of Scheduled Monuments: 1,803.¹¹

Number of listed buildings: 8,350.¹¹

Number of conservation areas: 60.¹¹

Sites currently at risk: A total of 437 buildings and monument were at risk in 2008.¹¹

Other important sites: Northern Ireland has one World Heritage Site, 334 battlefields and 154 registered historic parks, gardens and demesnes.¹²

MOD specific data:

In 2008/09, the MOD's historic estate comprised 797 listed buildings and 737 scheduled monuments.⁷

References:

1. English Heritage, http://www.english-heritage.org.uk/server/show/nav_1373
2. Historic Scotland, <http://www.historic-scotland.gov.uk/index/ancientmonuments/searchmonuments.htm>
3. Department of Culture, Media and Sport, 2009, <http://www.culture.gov.uk/4168.aspx>
4. MOD, Heritage Report 2006-07, <http://www.defence-estates.mod.uk/publications/corporate/MODHeritageReport2005-2007final.pdf>
5. MOD, Stewardship Report on the Defence Estates, 2007-08, <http://www.defence-estates.mod.uk/estate/estatestrategy.php>
6. MOD Sustainable Development Report and Action Plan 2009 <http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/SSDCD/SustainableDevelopmentPolicy/SustainableDevelopmentStrategyReportsAndActionPlans.html>
7. MOD, Stewardship Report on the Defence Estates, 2008-09, <http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipreport200809v7.pdf>
8. MoD Heritage Report 2007 – 2009, http://www.mod.uk/NR/rdonlyres/D0EEBC4D-5982-4C9F-BA4A-555936E544CD/0/heritage_report_0709.pdf
9. Scottish Government, 2010, Land Use Strategy, Strategic



Cultural Heritage

In 2009, 34 listed buildings were Grade I; 134 were Grade II*; and 629 were Grade II.⁸

A number of MoD sites are within the boundaries of nine cultural World Heritage Sites. (Cornwall and West Devon Mining Landscape; Derwent Valley Mills; Edinburgh World Heritage Site; Liverpool - Maritime Mercantile City; The Tower of London; Stonehenge, Avebury and Associated Sites; Hadrian's Wall; St Kilda World Heritage Site; and City of Bath).⁴

A number of MoD sites have been placed on the English Heritage (EH) and Historic Scotland (HS) Registers of Parks and Gardens. These include: Halton House and Gardens; Chicksands Priory; RAF Bentley Priory; Ampport House and Gardens; Minley Manor; Royal Naval Hospital, Haslar; Craigiehall and RAF Leuchars.⁴

Parts of the MoD estate lie within Local Planning Authorities (LPA) designated Conservation Areas including: RAF Bicester; RAF Hullavington; HMNB Portsmouth; Gosport; and RMA Sandhurst.⁴

At March 2009 the MOD report that 89% of the listed buildings and 80% of the scheduled monuments were in either good or fair condition.^{6,7}

Current issues for cultural heritage: In 2007 the MOD had 28 Buildings at Risk entries. Since that report three buildings have been removed from the list (one by repair, one by disposal and one by transfer to English Partnerships) and three have been added.⁵

Environmental Assessment Screening and Scoping Report, <http://www.scotland.gov.uk/Resource/Doc/1051/0095735.pdf>

10. StatsWales, 2008, State of the Environment Indicator 26 <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=6001>
11. Department of the Environment, 2010, Northern Ireland Environmental Statistics Report
12. Northern Ireland Environment Agency, 2010, Protecting our Built Heritage, http://www.ni-environment.gov.uk/built-home/protection/international_heritage.htm
13. The Scottish Civic Trust, 2010, Buildings at Risk: Register for Scotland, <http://www.buildingsatrisk.org.uk/BAR/>

Landscape

National:

Statutory Designated sites for protection of wildlife and landscape include National Parks, Areas of Outstanding Natural Beauty, Country Parks, Historic Gardens and Designed Landscapes, Regional Parks (in Scotland) and World Heritage Sites.³

Other important (non-statutory) sites include Areas of Great Landscape Value (AGLVs) in Scotland; Heritage Coasts (in England and Wales); and National Trust/National Trust for Scotland properties.³

The UK has 15 National Parks².

The UK (excluding Scotland) has 49 AONBs.¹

Scotland:

Scotland has 40 National Scenic Areas (NSAs) covering more than one million hectares (12.7 % of Scotland).⁷

Other areas designated for their landscape include two national parks and three regional parks together with a number of AGLVs.⁷

Wales:

There are four AONBs solely within Wales.¹

Other areas designated for their landscape include three national parks covering 20% of Wales (Brecon Beacons, Snowdonia and Pembrokeshire Coast National Park); 495km of heritage coast, and 58 landscapes of outstanding/special historic interest.⁵

Northern Ireland:

Northern Ireland has nine AONBs in addition to two proposed AONBs.¹

There are no National Park areas in Northern Ireland.

References:

1. National Association of AONB, <http://www.aonb.org.uk>
2. Association of National Park Authorities, <http://www.nationalparks.gov.uk/>
3. JNCC, landscape designations, <http://www.incc.gov.uk/page-1527>
4. Source MOD Sustainable Development Report and Action Plan 2009: <http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/SSDCD/SustainableDevelopmentPolicy/SustainableDevelopmentStrategyReportsAndActionPlans.htm>
5. ERM, 2009, Sustainability Appraisal of the Wales Waste Strategy: Sustainability Appraisal Report, http://wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/zerowastebackgroud/appraisals/?lang=en
6. Department of the Environment, 2003. Shared Horizons, <http://www.ni->



Landscape	
<p>Northern Ireland has been characterised by the Northern Ireland Environment Agency into 130 distinct landscape areas.⁶</p> <p>MOD specific data:</p> <p>The Ministry of Defence (MOD) is the third largest landowners in the United Kingdom with a diverse estate of some 238,000 hectares (1% of the UK mainland).⁴ A proportion of this land (or land over which MOD has access rights for military purposes) is within National Parks (such as Dartmoor, Northumberland and the Brecon Beacons), AONBs or other statutorily or locally-important landscapes and townscapes. MOD maintains a presumption in favour of public access unless there are operational or training requirements, safety or security limits.</p>	<p>environment.gov.uk/shared_horizons.pdf</p> <p>7. Scottish Government, 2010, Land Use Strategy, Strategic Environmental Assessment Screening and Scoping Report, http://www.scotland.gov.uk/Resource/Doc/1051/0095735.pdf</p>



Table A2 - Summary of National Trends, Targets and Likely Evolution of the Baseline

Biodiversity and Conservation	
<p>National Trends:</p> <p>The general global trend in biodiversity is generally towards a decreased level of variability among living organisms. "Biodiversity loss has accelerated to an unprecedented level, both in Europe and worldwide. It has been estimated that the current global extinction rate is 1,000 to 10,000 times higher than the natural background extinction rate. In Europe some 42% of European mammals are endangered, together with 15% of birds and 45% of butterflies and reptiles".¹</p> <p>The global trend towards a decline in biodiversity is mirrored in the UK. In the UK, 30% of current biodiversity indicators are showing long term deterioration with 27% showing improvement. Areas of concern are: farmland/woodland/wetland birds; butterflies; bats; and marine ecosystem integrity.⁵ In England the trend in populations of breeding wading birds on unprotected lowland wetland grasslands is towards a major decline.³ However, SSSIs in England have experienced a dramatic improvement in the overall site condition over the last 10 years as a result of protection and management.³</p> <p>In the UK there has been a trend (between 1996 and 2008) of a steady increase in the areas of SPAs and SACs in the UK. In 2009 over 80% of SACs and SPAs in England were in favourable or recovering condition. In 2008 in Scotland over 60% of SACs and over 70% of SPAs were in favourable or recovering condition⁴.</p> <p>There is a UK trend towards increased areas protected for biodiversity, flora and fauna. The overall total extent of land and sea protected in the UK has increased from 2.3 million to 3.8 million hectares between 1996 and 2009.⁴ Despite the increase in area protected for its biodiversity there is concern that the protected site network as it exists is insufficient to protect biodiversity in England as a whole and that some species and habitats will be confined to these protected areas and more vulnerable to pressures and threats, including climate change¹⁴.</p> <p>Results of the 2008 reporting round of the UK Biodiversity Action Plan indicate that in the UK.⁷</p> <p>Habitats:</p> <ul style="list-style-type: none"> • 16% of priority habitats were increasing (compared to 20% in 2005); • 9% of priority habitats were stable (compared to 13% in 2005); • 13% of habitats were declining (continuing/accelerating) (compared to 7% in 2005); • 20% of habitats were declining (slowing) (compared to 24% in 2005); • 24% of habitats were fluctuating (compared to 9% in 2005); • 9% of habitats showed no clear trend (compared to 2% in 2005); and • The status of 9% of habitats was unknown (compared to 24% in 2005). <p>Species:</p> <ul style="list-style-type: none"> • 7% of species were increasing (compared to 8% in 2005); • 23% of species were stable (compared to 25% in 2005); • 22% of species were fluctuating (compared to 14% in 2005); • 10% of species were declining (slowing) (compared to 9% in 2005); • 7% of species were declining (continuing/accelerating) (compared to 10% in 2005); • 2% of species were lost (pre BAP publication) (no change since 2005); • 6% of species showed no clear trend (compared to 9% in 2005); and • The status of 20% of species was unknown (compared to 22% in 2005). <p>The main reasons for the collapse of England's wildlife, summarised in Section 2.1.3 are not going to</p>	<p>References:</p> <ol style="list-style-type: none"> 1. European Commission, http://ec.europa.eu/environment/nature/biodiversity/intro/index_en.htm 2. Joint Nature Conservation Committee, 2009 Biodiversity Indicators, http://www.jncc.gov.uk/page-4229 3. State of the Natural Environment Report' (2008) http://naturalengland.etraderstor.es.com/NaturalEnglandShop/product.aspx?ProductID=31a51089-6654-4d48-8f89-30d3c8c66aee 4. Joint Nature Conservation Committee, Protected Areas, http://www.jncc.gov.uk/page-4241 5. UK Biodiversity Indicators in Your Pocket 2010, http://www.jncc.gov.uk/pdf/BIYP_2010.pdf 6. Defra http://www.defra.gov.uk/environment/marine/protected/mcz/index.htm (accessed 05/10/2010) 7. Biodiversity Action Reporting System, http://www.ukbap-reporting.org.uk/status/uk.asp 8. Wales SoE Indicator 21 9. Countryside Council for Wales (2006) Sites of Special Scientific Interest (SSSIs) in Wales Current state of knowledge Report for April 2005 – Mar 2006 10. Reported on in WAG (2009) Wales Spatial Plan Update Sustainability Appraisal and Strategic Environmental Assessment Environmental Report Appendix Volume 3 – Topic Papers 11. SoE Indicator 19a 12. Mackey, E.C. and Mudge, G. (2010). Scotland's Wildlife: An assessment of biodiversity in 2010. Scottish Natural Heritage, Inverness. 13. Northern Ireland Biodiversity Group (2009) Delivery of the Northern Ireland Biodiversity Strategy The second report of the Northern Ireland Biodiversity Group 2005 - 2009 14. Lawton et al (2010) <i>Making Space for Nature: A review of England's Wildlife Sites and</i>



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go away. Indeed they are likely to increase and will be exacerbated by climate change, making the corrective action advocated in this report even more important.

The Marine and Coastal Access Act contains provisions for a new type of marine protected area called Marine Conservation Zones (MCZs). MCZs will exist alongside European marine sites (SACs and SPAs), to form a marine protected areas network. Existing Marine Nature Reserves at Lundy and Skomer will be converted into MCZs. MCZs will protect areas covering the habitats and species which exist in our seas. They will be used to protect areas that are important to conserve the diversity of rare, threatened and representative habitats and species. The Act includes two new duties on all public bodies in respect of MCZs. Firstly all public bodies will be under a general duty to exercise their functions in a manner which will further the conservation objectives for MCZs. Secondly, public bodies will be under a duty not to authorise anything where there is a significant risk of it hindering the conservation objectives for a site.⁶ The creation of a network of MCZs will create a new network of protected marine sites and should lead to an improvement in the biodiversity value of these sites.

Trends in Scotland:⁷

Results of the 2008 reporting round of the UK Biodiversity Action Plan indicate that in Scotland:

Habitats:

- 13% of priority habitats were increasing (compared to 15% in 2005);
- 21% of priority habitats were stable (compared to 20% in 2005);
- 3% of habitats were declining (continuing/accelerating) (compared to 0% in 2005);
- 26% of habitats were declining (slowing) (compared to 29% in 2005);
- 16% of habitats were fluctuating (compared to 2% in 2005);
- 3% of habitats showed no clear trend (compared to 7% in 2005); and
- The status of 21% of habitats was unknown (compared to 27% in 2005).

Species:

- 4% of species were increasing (compared to 5% in 2005);
- 23% of species were stable (compared to 24% in 2005);
- 15% of species were fluctuating (compared to 3% in 2005);
- 11% of species were declining (slowing) (compared to 9% in 2005);
- 7% of species were declining (continuing/accelerating) (compared to 5% in 2005);
- 1% of species were lost (pre BAP publication) (no change since 2005);
- 7% of species showed no clear trend (compared to 8% in 2005); and
- The status of 32% of species was unknown (compared to 42% in 2005).

Trends in Wales:¹⁰

SACs and SPAs are also known as Natura 2000 sites and are designated for their importance at the European level. Each Natura 2000 site is designated for one or more conservation features and the condition of these features is monitored on an approximate six-year cycle. For the period 2000 - 2008 the condition of the conservation features of SACs and SPAs (Natura 2000 sites) was assessed as follows:⁸

- 54% of Natura 2000 species features were in favourable condition, compared to 45% in unfavourable condition over the period 2000- 2008; and
- 60% of Natura 2000 habitats features were in favourable condition, compared to 25% unfavourable and 15% recovering for the period 2000 - 2008.

A 2006 review⁹ of SSSIs in Wales found that:

- 12% of Wales is designated as Sites of Special Scientific Interest (SSSI);

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- during 2005/6 Wales gained three SSSIs, an additional 399 ha;
- 71% of SSSIs by area are also sites of international importance for wildlife;
- one quarter of SSSIs can be reached within 1km of a town or city;
- 62% of SSSIs by area are classed as open access land;
- from a sample of SSSIs, 47% of designated habitats and species were considered to be in favourable condition;
- 25% of SSSIs by area are known to be owned or managed by conservation sector bodies; and
- 62 infringements to SSSI legislation were reported during 2005/6.

This compares with a 2005 review of SSSIs by CCW which found that 29% of the area covered by SSSIs was in favourable condition, 18% was in unfavourable but recovering condition, with a further 52% being in 'unfavourable and declining' condition. The remaining 1% was classified as partially destroyed.

Results of the 2008 reporting round of the UK Biodiversity Action Plan indicate that in Wales:⁷

Habitats:

- 5% of priority habitats were increasing (compared to 21% in 2005);
- 5% of priority habitats were stable (compared to 13% in 2005);
- 24% of habitats were declining (continuing/accelerating) (compared to 13% in 2005);
- 26% of habitats were declining (slowing) (compared to 41% in 2005);
- 16% of habitats were fluctuating (compared to 8% in 2005); and
- 8% of habitats showed no clear trend (compared to 5% status unknown in 2005).

Species:

- 7% of species were increasing (compared to 6% in 2005);
- 15% of species were stable (compared to 18% in 2005);
- 16% of species were fluctuating (compared to 14% in 2005);
- 5% of species were declining (slowing) (compared to 6% in 2005);
- 8% of species were declining (continuing/accelerating) (compared to 7% in 2005);
- 3% of species were lost (pre BAP publication) (compared to 4% in 2005);
- 9% of species showed no clear trend (compared to 6% in 2005); and
- The status of 35% of species was unknown (compared to 37% in 2005).

Trends in Northern Ireland:

Priority habitats and species are monitored over a three-year period by NIEA as an indicator of biodiversity. The overall status and trends of priority habitats and species, for which information is available, has remained relatively unchanged between 2005 and 2008.

Results of the 2008 reporting round of the UK Biodiversity Action Plan indicate that in Northern Ireland:⁷

Habitats:

- 11% of priority habitats were increasing (no change from 2005);
- 11% of priority habitats were stable (compared to 14% in 2005);
- 11% of habitats were declining (continuing/accelerating) (compared to 3% in 2005);



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- 17% of habitats were declining (slowing) (compared to 34% in 2005);
- 3% of habitats were fluctuating (no change from 2005);
- 26% of habitats showed no clear trend (compared to 6% in 2005); and
- The status of 20% of habitats was unknown (compared to 29% in 2005).

Species:

- 1% of species were increasing (no change from 2005);
- 6% of species were stable (compared to 9% in 2005);
- 9% of species were fluctuating (compared to 3% in 2005);
- 2% of species were declining (slowing) (no change from 2005);
- 5% of species were declining (continuing/accelerating) (no change from 2005);
- 6% of species were lost (pre BAP publication) (compared to 7% in 2005);
- 7% of species showed no clear trend (compared to 3% in 2005); and
- The status of 54% of species was unknown (compared to 65% in 2005).

MOD Trends:

MOD is on target to achieve SDiG targets across the UK; further targets will be set to maintain adherence going forward

National Targets:

Coastal defence authorities have a specific target to ensure no net loss of habitats covered by Biodiversity Action Plans.

Defra set out the aim of halting biodiversity loss in the UK by 2010.

The pan-government biodiversity framework target (captured within the MOD biodiversity strategy) requires 95% of SSSIs to be in 'Favourable' or 'Unfavourable Recovering' condition by 2010 (85% for Wales). The Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000) also includes a target for reversing the decline in farmland birds in England by 2020.

In 2008 85% of SSSIs in England were in target conditions, 68% in Scotland, 78% in Wales and 57% in Northern Ireland. In March 2008 the following percentages of MOD managed SSSIs were in target condition: 85% in England, 68% in Scotland, 78% in Wales and 57% in Northern Ireland.

Targets in Scotland:

Scotland's 2010 biodiversity targets underpin the high level target to halt the loss of biodiversity by 2010. Based on the European Biodiversity Action Plan framework and adopted by the Scottish Biodiversity Committee in March 2008, eight priority objectives, four supporting measures and 37 targets for action have been specified for Scotland.¹²

Targets in Wales:

No detailed targets for biodiversity in Wales could be found. Consultee comment welcome.

Targets in Northern Ireland:

In 2005 Northern Ireland Biodiversity Group produced a report which included a range of recommendations of measures that could be undertaken to improve the implementation of the Northern Ireland Biodiversity Strategy and stressed the urgency of these if the 2016 target of halting biodiversity loss is to be achieved.¹³

MOD Targets:

MOD SOGE targets are to achieve 95% of SSSIs in England and Scotland to be at Favourable or Unfavourable Recovering condition by the end of 2010. The target in Wales is 85% by 2013, and in Northern Ireland it is 95% by 2013.



Population	
<p>i) Demographic Trends</p> <p>National Trends:</p> <p>The current UK population is generally increasing, and projected to reach 71.6 million by 2033.⁴</p> <p>The age structure of the UK population is moving towards an ageing population: those of pensionable age are projected to increase from 19.2% in 2008 to 21.8% of the population by 2033 (note that the pensionable age is to change over this period). Those aged between 15-64 years are projected to decrease from 62.1% to 60.5% of the population, whilst those under 16 are projected to decrease from 18.7% to 17.9% of the population by 2033.⁴</p> <p>Trends in Scotland, Wales and Northern Ireland:</p> <p>Between 2008 and 2033, the population of Scotland is projected to increase from 5.17 to 5.84 million. The number of children aged under 16 is projected to decrease by 1.5% from 0.91 million in 2008 to 0.9 million by 2033; the number of people of working age is projected to increase by 2.1% from 3.24 million in 2008 to 3.31 million; the number of people of pensionable age is projected to rise by 23.9% from 1 million in 2008 to 1.34 million.⁶</p> <p>The population of Wales is projected to increase to 3.35 million by 2033 (a 12 per cent increase). Although more births than deaths are projected throughout most of the projection period, net inward migration is the main reason for projected population growth. The number of children is projected to decrease slightly during the first five years of the projection period, with around one per cent less children in 2013 than in 2008. This is because the projected decrease in the number of older children is greater than the increase in the number of young children during the next few years. The number of pensioners is projected to increase during most of the projection period despite the change to state pension age. It is projected that there will be 185,000 (29 per cent) more pensioners in 2033 than in 2008. The population of Wales will become gradually older with the median age of the population rising from 41.1 years in 2008 to 44.2 years in 2033.⁷</p> <p>In Northern Ireland, the population is projected to increase to 1,985,800 between 2008 and 2033 (an increase of 11.9%). The proportion of the population that is children under the age of 16 is projected to decrease from 21% of the total population in 2008 to 19% in 2033; the adult population (between the ages of 16 and 64) is also projected to decrease from 65% to 59% of the total population between 2008 and 2033 whilst the elderly population is projected to increase from 14% to 22% of the total population.⁸</p> <p>National Targets:</p> <p>There are no formal targets for population growth in the UK (other than the recent intention to introduce non-EU immigration caps).</p> <p>MOD targets to reach 8% ethnic minority representation in the Armed Forces by 2013 (existing MOD commitment).³ MOD targets to reach 15% women representation in the Senior Civil Service (SCS) by 2009 (existing MOD commitment).³ In 2009, 9.5% of the military workforce was female.⁵</p> <p>Targets in Scotland, Wales and Northern Ireland:</p> <p>Scotland has a population target of matching the average European (EU15) population growth over the period from 2007 to 2017. Population growth in 2008 was slower than that of the EU 15 countries, and the gap in annual growth rates has increased.²</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Defra, Environment in your pocket, 2008, http://www.defra.gov.uk/environment/statistics/eiyp/index.htm 2. Scottish Government, http://www.scotland.gov.uk/About/scotPerforms/purposes/population 3. MOD, Sustainable Development Report and Action Plan, 2008, http://www.mod.uk/NR/rdonlyres/D8407A1C-CA68-4AD4-8E17-9F71B151AF6A/0/SusDevReport2008.pdf 4. ONS, National Population Projections 2008-based, http://www.statistics.gov.uk/pdfdir/pproj1009.pdf 5. MoD Annual Report and Accounts Volume One 2008-2009 Annual Performance Report, http://www.mod.uk/NR/rdonlyres/0981769C-D30A-469B-B61D-C6DC270BC5C5/0/mod_arac08_09_vol1.pdf 6. General Register Office for Scotland population projections, http://www.scotpho.org.uk/home/Populationdynamics/Population/DataPagesofPopulation/Population_scotprojections.asp 7. Welsh Assembly Government 2008-based National Population Projections, http://wales.gov.uk/topics/statistics/headlines/pop2009/hdw20091021/?lang=en 8. Northern Ireland Statistics and Research Agency, 2008-based population projections, http://www.nisra.gov.uk/archive/demography/population/projection/popproj08.pdf
<p>ii) Socio-Economic Trends</p> <p>National Trends:</p> <p>Gross Domestic Product rose by 1.2 per cent in the second quarter 2010 due to strong rebound in construction output from the weather-affected level in the first quarter, and a pick up in services sector growth. This is despite the negative impacts of the volcanic ash cloud and industrial action in the air transport sector. In the labour market, employment rose in the second quarter of the year, but remains below pre-recession levels and rates. There is evidence of a strong rise in part-time employment through the recession, with self-employment also strengthening during 2009. Recent output increases</p>	<p>References:</p> <ol style="list-style-type: none"> 1. ONS, Economic & Labour Market Review (Vol.4, no. 9) September 2010 http://www.statistics.gov.uk/downloads/theme_economy/EconReview_0910.pdf 2. Scottish Government Statistics, High Level Summary of Statistics, Economy, April 2010,



Population

have been partly delivered through higher labour productivity.¹

Trends in Scotland, Wales and/or Northern Ireland:

In Scotland GDP fell by 3.5 per cent annually and remained unchanged during the first quarter of 2010 (seasonally adjusted). In the year to end-March 2010, the Scottish service sector fell by 2.4 per cent, the production sector fell by 7.1 per cent and the construction sector fell by 8.3 per cent. In the first quarter of 2010, the service sector fell by 0.2 per cent, the production sector remained unchanged and the construction sector grew by 2.8 per cent.²

In Wales production output for the four quarters ending Q1 2010 fell by 10.1 per cent compared with the previous four quarters. Production output for quarter 1 2010 rose by 5.2 per cent compared with the previous quarter. The figure for the same period for the UK rose by 1.0 per cent. Manufacturing output in Wales for the four quarters ending Q1 2010 fell by 9.7 per cent compared with the previous four quarters. Manufacturing output for quarter 1 2010 rose by 5.7 per cent compared with the previous quarter. The UK index rose by 1.4 per cent over the same period. For the four quarters to quarter 2 2010, the value of exports of goods from Wales fell by 15.6 per cent on the previous four quarters and rose by 35.5 per cent over 1999. Exports to EU countries accounted for 56 per cent of the total in the latest four quarters, compared to 52 per cent in the previous four quarters. Wales had the lowest level of GVA per head in the UK regions.³

Provisional results for the Northern Ireland Index of Production for the first quarter of 2010 show that output levels increased over the quarter in real terms (1.5%). This is the first quarter to report an increase after peaking in Q2 2008. Over the year NI Production levels fell by 1.9%. Manufacturing comprises the main element of the production index. Manufacturing output for Q1 2010 recorded a rise of 1.1% compared to the previous quarter. NI recorded a decrease of 2.8% in manufacturing output compared to the same period one year earlier. Over the latest four quarters NI manufacturing output decreased by 10.2% compared to the previous four quarters. Three of the six broad manufacturing subsectors reported an increase over the quarter, the remainder reported a decrease. Quarter 1 2010 manufacturing productivity increased by 1.4% over the quarter and by 2.8% compared to the same quarter one year earlier.

National Targets:

DCLG aims to raise the productivity of the UK economy, maximise job opportunities for all and improve the economic performance of all English regions and reduce the gap in economic growth rates between regions.⁵

The UK Government aims to raise the rate of the UK's productivity growth over the economic cycle and narrow the productivity gap with our major industrial competitors.⁶

Targets in Scotland:

The key targets for Scotland in terms of economic development to 2017 are:

- to match the GDP growth rate of the small independent EU countries;
- to raise Scotland's GDP growth rate to the UK level by 2011;
- to rank in the top quartile for productivity amongst our key trading partners in the OECD;
- to maintain our position on labour market participation as the top performing country in the UK and close the gap with the top 5 OECD economies;
- to match average European (EU-15) population growth over the period from 2007 to 2017, supported by increased healthy life expectancy in Scotland over this period;
- to increase overall income and the proportion of income earned by the three lowest income deciles as a group, and;
- to narrow the gap in participation between Scotland's best and worst performing regions.⁷

Targets in Wales:

The key economic development targets for Wales to 2010 are to:

- increase net employment Raise by 175,000;

3. <http://www.scotland.gov.uk/Reso urce/Doc/933/0102344.pdf>
Statistics for Wales, Key Economic Statistics, September 2010,
<http://wales.gov.uk/docs/statistic s/2010/100917sb772010en.pdf>
4. DETINI, July 2010, Northern Ireland Index of Production Q1 2010,
http://www.detini.gov.uk/q1_201 0_publication-3.pdf
5. DCLG, Planning Policy Statement 4: Planning for Sustainable Economic Growth
6. HM Government, PSA Delivery Agreement 1: Raise the Productivity of the UK Economy
7. Scottish Government, Government Economic Strategy, <http://www.scotland.gov.uk/Reso urce/Doc/202993/0054092.pdf>
8. Welsh Assembly Government; Wales, A Vibrant Economy, <http://new.wales.gov.uk/deet/pub lications/bande/wave/wavee.pdf? lang=en>
9. DETINI, Social Economy Enterprise Strategy 2009 – 2011, http://www.detini.gov.uk/social_e conomy_enterprise_strategy_20 09-2011.pdf



Population	
<ul style="list-style-type: none"> increase net employment in Finance and Business services Raise by 20,000; increase stock of VAT registered businesses per 10,000 persons of working age Raise to 93% of UK average; increase business enterprise R&D expenditure as a % of GDP Raise to >1% 0.4%; growth in the value of exports Match UK growth; increase the proportion of Welsh businesses using e-commerce Match UK average proportion; increase household disposable income per head of the population to 95% of UK average; increase tourism expenditure in Wales by an average of 6% per annum over period; reduce the proportion of adults of working age without qualifications to 1 in 10, and; increase the proportion of adults of working age with a level 4 qualification to over 3 in 10.⁸ <p>Targets in Northern Ireland:</p> <p>For Northern Ireland, the main economic development ralted objectives are to:</p> <ul style="list-style-type: none"> increase awareness of the sector and establish its value to the local economy; develop the sector and increase its business strength; and create a supportive and enabling environment.⁹ 	

Human Health	
<p>National Trends:</p> <p>Life expectancy at birth in the UK has reached its highest level on record for both males and females. A newborn baby boy could expect to live 77.7 years and a newborn baby girl 81.9 years if mortality rates remain the same as they were in 2007 - 09. Females continue to live longer than males, but the gap has been closing. Although both sexes have shown annual improvements in life expectancy at birth, over the past 27 years the gap has narrowed from 6.0 years to 4.2 years. Based on mortality rates in 1980 - 82, 26 per cent of newborn males would die before age 65, but this had reduced to 15 per cent based on 2007 - 09 rates. The equivalent figures for newborn females were 16 per cent in 1980 - 82 and 10 per cent in 2007 - 09. Life expectancy at age 65 - the number of further years someone reaching 65 in 2007 - 09 could expect to live - is also higher for women than for men. Based on 2007 - 09 mortality rates, a man aged 65 could expect to live another 17.6 years, and a woman aged 65 another 20.2 years. Within the UK, life expectancy varies by country. England has the highest life expectancy at birth, 78.0 years for males and 82.1 years for females. Life expectancy at age 65 is also higher for England than for the other countries of the UK.¹¹</p> <p>The current general trend in human health is generally towards improved health, greater life expectancy and reduced mortality from treatable conditions.³</p> <p>Health in the UK is improving, but over the last 10 years health inequalities between the social classes have widened.⁴</p> <p>Between the 1970s and 2000 the Radiological dose to the UK population as a whole, presented as a per capita dose to a population of 55 million, did not changed significantly as it was dominated by the constant level of exposure to natural sources of radiation.¹</p> <p>Between 2001 and 2003 the average annual dose to the public was 2.7 mSv. This is a slight increase over that found in the previous HPA review (where the average annual dose to the public was 2.6mSv (period 1992-1997)), mainly due to an increased contribution from medical irradiation. There has been a long-term trend towards lower occupational doses in the nuclear industry, and worker doses in medicine, general industry and research tend to be low.²</p>	<p>References:</p> <ol style="list-style-type: none"> 1. A L Jones et al 2007, Review of trends in the UK population dose, J. Radiol. Prot. 27 381-390 http://www.iop.org/EJ/abstract/0952-4746/27/4/R01 2. Health Protection Agency, Ionising Radiation Exposure of the UK Population: 2005 Review, http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733839711?p=1197637096018 3. Health Survey for England 2007 Healthy lifestyles: knowledge, attitudes and behaviour Summary of key findings, Office of National Statistics, http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6637 4. The Government's Response to the Health Select Committee Report on Health Inequalities, May 2009, http://www.official-documents.gov.uk/document/cm76/7621/7621.pdf 5. NHS Scotland, Health and Wellbeing Profiles 2008, Scotland Overview Report, http://www.scotpho.org.uk/nmsruntime/saveasdialog.asp?IID=4361&SID=3671



Human Health

Trends in Scotland:

Male life expectancy has improved across Scotland as a whole (from 72.3 years during 1994-98 to 73.9 years during 2001-05). Female life expectancy has improved across Scotland as a whole (from 77.9 years during 1994-98 to 79.1 years during 2001-05). Alcohol related and attributable hospital patient rates have increased over time for Scotland as a whole, although rates are declining in some areas of Scotland. The number of people being admitted to hospital with heart disease has been declining over time in Scotland as a whole, and in most but not all CHPs.⁵

Trends in Wales:

In Wales the under 75 age standardised mortality rate shows substantial variation across Wales. These differences from the Wales rate are statistically significant. The under 75 age-standardised mortality rate has fallen in all LHB areas in Wales; overall it has declined by 18% between 1998 and 2007. This fall is likely to reflect not only the activities of health services, but also improvements in living standards in the latter part of the 20th century. The greatest causes of death in people aged under 75 in Wales are cancer, circulatory disease and respiratory disease, together accounting for 40%, 27% and 9% of approximately 11,000 deaths in 2007.⁶

Trends in Northern Ireland:

In Northern Ireland between 1999-01 and 2004-06, male life expectancy at birth increased from 74.8 to 76.2 years (+1.4 years) and female life expectancy increased from 79.8 to 81.0 years (+1.3 years). A large proportion of the increase in life expectancy resulted from declining mortality due to Coronary Heart Disease which led to an increase overall of 0.8 years for males and 0.5 years for females in life expectancy. However reducing mortality due to other types of circulatory disease, respiratory disease and cancer also increased life expectancy. Rising mortality over time due to accidental deaths, suicides, chronic liver disease and all 'other' causes of death reduced life expectancy by almost half a year for both males and females.⁷

National Targets:

- national target to reduce health inequalities by 10% in the three-year period 2009-2011, as measured by infant mortality and life expectancy at birth;
- by 2010, to reduce the death rate by cancer in people under 75 by at least a fifth (Department of Health (DoH), Saving Lives: Our Healthier Nation White Paper);
- by 2010, to reduce the death rate by Coronary Heart Disease and Stroke in people under 75 by at least two fifths (DoH, Saving Lives: Our Healthier Nation White Paper);
- by 2010, to reduce the death rate due to accidents by at least a fifth and serious injury by at least a tenth (DoH, Saving Lives: Our Healthier Nation White Paper); and
- by 2010, to reduce the death rate from mental illness due to suicide and undetermined injury by at least a fifth (DoH, Saving Lives: Our Healthier Nation White Paper).
- Dept of Health to reduce smoking in manual social groups, prevent and manage other risks for coronary heart disease and cancer especially targeting the over-50s and improve housing quality by tackling cold and dampness and reducing accidents (DoH, Saving Lives: Our Healthier Nation White Paper).
- NHS to improve health as well as treating sickness; give patients more rights and control over their own health and care; ensure quality at the heart of the NHS; strengthen the involvement of clinicians in decision making at every level of the NHS; empower frontline staff to lead change that improves quality of care for patients; value the work of NHS staff (Darzi, High quality care for all: NHS Next Stage Review final report).

Targets in Scotland:

In Scotland, the Health Improvement Targets for 2010/11 are:

- achieve agreed completion rates for child healthy weight intervention programme by 2010/11;
- achieve agreed number of screenings using the setting-appropriate screening tool and appropriate alcohol brief intervention, in line with SIGN 74 guidelines by 2010/11;

6. NHS Wales, Wales and its Local Health Boards, <http://www.wales.nhs.uk/sitesplus/documents/888/All%20Wales%20-%20Eng.pdf>
7. DHSSPS, NI Health and Social Care Inequalities Monitoring System Changes in the NI life expectancy gap 1999/01 to 2004/06, http://www.dhsspsni.gov.uk/2007/ineq_mon_update.pdf
8. WAG, Wales: A Better Country, http://wales.gov.uk/docrepos/40382/dhss/strategies/walesabettercountry_-e.pdf?lang=en
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Human Health

- reduce suicide rate between 2002 and 2013 by 20%, supported by 50% of key frontline staff in mental health and substance misuse services, primary care, and accident and emergency being educated and trained in using suicide assessment tools/ suicide prevention training programmes by 2010;
- through smoking cessation services, support 8% of local Board's smoking population in successfully quitting (at one month post quit) over the period 2008/9 - 2010/11;
- increase the proportion of new-born children exclusively breastfed at 6-8 weeks from 26.6% in 2006/07 to 33.3% in 2010/11;
- achieve agreed number of inequalities targeted cardiovascular Health Checks during 2010/11; and
- at least 60% of 3 and 4 year olds in each SIMD quintile to have fluoride varnishing twice a year by March 2014.⁹

Targets in Wales:

In Wales, the key strategy aims are:

- to ensure effective and timely treatment;
- to ensure effective and timely treatment;
- to remove barriers to early treatment;
- to ensure the needs of older people are reflected in services and policy;
- to provide the most routine services quickly and easily locally while ensuring major operations are carried out with suitable professional support;
- to promote innovative solutions to addressing health inequalities; and
- to ensure funds follow the underlying needs for action to address health inequalities.⁸

Targets in Northern Ireland:

The main public health targets for Northern Ireland are:

- improve male and female life expectancy here towards the levels of the best EU countries;
- reduce by two thirds the gap in life expectancy between those living in the most deprived 20% of electoral wards and the average life expectancy here for both men and women between 2000 and 2025;
- reduce the standardised death rate per 100,000 people under 80 years of age for cancer by 20% from 178 deaths for males in 2002 and 143 deaths for females to 142 deaths and 115 deaths respectively;
- increase the five-year cancer survival rates to the levels of the best European countries;
- reduce the death rate per 100,000 people under 80 years of age for coronary heart disease from 130 deaths for males in 2002 and 66 deaths for females to compare with the European country with the lowest death rate;
- reduce the death rate per 100,000 people under 80 years of age for respiratory disease by 50% from 49 deaths for males in 2002 and 43 deaths for females to 25 deaths and 21 deaths respectively;
- reduce the death rate per 100,000 people under 80 years of age for Stroke by 50% from 38 deaths for males in 2002 and 36 deaths for females to 19 deaths and 18 deaths respectively; and
- ensure that everyone with diabetes is screened annually for the risk of kidney disease so that problems can be identified early and managed in a community-based setting.
- reverse current trends towards a doubling in the prevalence of diabetes over the next 10 years and reduced the number of people with diabetes from current levels (30,000 to 50,000 in 2002) to levels comparable to European countries with the lowest prevalence;
- reduce the number of people with a preventable visual impairment from current levels



Human Health	
<p>(estimated 24,000 people in Northern Ireland) to be comparable with EU countries which have the lowest levels of blindness and visual impairment; and</p> <ul style="list-style-type: none"> reduce the number of suicides for all persons per 100,000 by 50% and reduce the number of suicides for males aged 15-44 per 100,000 by 50%.¹⁰ <p>MOD Targets</p> <ul style="list-style-type: none"> MOD to have no fatalities attributable to Health and Safety failures (standing commitment) MOD to reduce the number of serious injuries against the previous years' performance (standing commitment) 	

Human Health (Noise)	
<p>National Trends:</p> <p>The number of noise complaints received by Environmental Health Officers in England and Wales (measured in rates per million of the population) more than doubled between 1990/91 and 2000/01 from 3,644 to 7,670. The greatest increase in noise complaints has been from domestic sources with an increase of 145% over the 10 year period whilst industrial/commercial sources increased by 39.4% to a rate of 1,273 per million of the population¹</p> <p>Trends in Scotland:</p> <p>Comparable noise complaints data is not available for Scotland and Northern Ireland.</p> <p>Data issued by the Scottish Government highlights that after peaking at 10,460 in 1997/8, the total number of complaints about noise received by Scottish councils dropped each year, to 9,165 in 2001/2002, before rising significantly to 28,217 in 2005/2006. After the introduction of the new way of reporting the number of noise complaints, the total number of noise complaints rose to 55,962 in 2006/07 and increased further to 58,313 in 2008/2009. These large increases in the number of noise complaints made to councils between 2005/06 and 2006/07 were mainly due to the introduction of dedicated noise teams in local authorities.²</p> <p>Trends in Northern Ireland:</p> <p>There has been a 42% increase in total noise complaints made between 2003/04 and 2006/07 in Northern Ireland. There was a subsequent decrease of 2% in the total complaints received between 2006/07 and 2007/08 and further reduction of 5% between 2007/08 and 2008/09. Between 2003/04 and 2007/08 complaints from industry, manufacturing and workshops increased consistently, with a total increase of 25% over the five year period. This trend reversed between 2007/08 and 2008/09 when a decrease of 20% was experienced. This is most likely a direct result of the downturn in the economy.³</p> <p>National Targets:</p> <p>The Department for Business, Innovation and Skills (BIS) sets permissible sound levels for different types of equipment (DTI, The Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001).</p> <p>Targets in Scotland, Wales and/or Northern Ireland:</p> <p>Planning Advice Note 56: Planning and Noise sets out noise exposure categories for dwellings in Scotland.</p> <p>Technical Advice Note 11 contains noise exposure categories for dwellings in Wales.</p> <p>The Permitted Levels of Noise Direction sets out that the permitted level of noise from dwellings in Northern Ireland.</p>	<ol style="list-style-type: none"> Office for National Statistics, Noise complaints received by Environmental Health Officers, http://www.statistics.gov.uk/cci/nsc.asp?ID=6914 The Scottish Government, 2009, Noise Complaints, http://www.scotland.gov.uk/Topic/Statistics/Browse/Environment/seso/sesoSubSearch/Q/SID/53 Department of the Environment, 2009, Noise Complaint Statistics for Northern Ireland, http://www.doeni.gov.uk/noise_complaint_statistics_report_for_northern_ireland_200809.pdf Scottish Government, 1999, Planning Advice Note 56: Planning and Noise http://www.scotland.gov.uk/Publications/1999/04/PAN56 Welsh Assembly Government, 1997, Technical Advice Note 11: Noise http://wales.gov.uk/topics/planning/policy/tans/tan11?lang=en Department of the Environment, 2010, Permitted Levels of Noise Directions http://www.doeni.gov.uk/permitted_level_of_noise_northern_ireland_directions_2010.pdf



Soil and Geology

National Trends:

As there are now more stringent statutory controls on land contamination and remediation, increased areas of historic contamination are being remediated and fewer areas are being left in a contaminated state following decommissioning of commercial and industrial sites. An estimated 58,500 inspections of land with the potential to be contaminated have been completed in England, Scotland and Wales (combined totals). Northern Ireland is in the early stages of implementing statutory monitoring and reporting of land contamination and remediation and therefore no trend data is readily available.

An estimated 25,000 inspections of land took place in England between 2000 and 2007.¹

Soil degradation is accelerating. This is in part a natural phenomenon but some soil degradation processes are exacerbated by unsustainable human uses. Major threats include: erosion, organic matter decline, compaction, salinisation, landslides, contamination, sealing and biodiversity decline.¹

There is a steady loss of soils to development, contaminated sites, damage by muddy floods and water pollution by silt and fertilisers.¹

Trends in Scotland, Wales and/or Northern Ireland:

In Scotland, an estimated 27,000 inspections of land with the potential to be contaminated have already been or are in the process of being undertaken (equating to an estimated 40% of all such sites). A total of 807 sites (equivalent to 1,864 hectares) of land that was affected by contamination have been remediated.³

There is some evidence that soils are becoming slightly less acidic in some areas of Scotland due to reduced acid deposition. Ecological damage to soils caused by run-off from roads and urban areas is likely to increase. Sewage sludge and other organic waste recycling to land are projected to continue. There is some emerging evidence that sewage sludge application (which can be high in zinc) may be having a long term affect on the long-term fertility of some soils. Agricultural land is being developed at twice the rate as in the 1990s. This development is likely to have occurred on some of Scotland's versatile and productive soils. Loss of organic matter has been identified as a significant threat. There is some evidence that levels of organic matter may be declining.⁴

Trends in Wales:

In Wales, an estimated 6,500 inspections of land with the potential to be contaminated have been completed between 2000 and 2007.¹

In Scotland, Wales and Northern Ireland there is no routine monitoring of soil and limited information on trends. However, development, agriculture and forestry practices, along with climate change are likely to continue to pose a threat to soil quality.

National Targets:

CLG sets out sites of regional and local biodiversity and geological interest have a fundamental role to play in meeting overall national biodiversity targets, contributing to the quality of life and the well-being of the community and in supporting research and education (PPS 9: Biodiversity and Geological Conservation).

'Safeguarding our Soils', the Soil Strategy for England outlines the Government's approach to safeguarding England's soils for the long term. The Strategy provides a vision to guide future policy development and sets out the practical steps that need to be taken to prevent further degradation of soils, enhance, restore and ensure their resilience, and improve understanding of the threats to soil and best practice in responding to them. The Strategy includes an action to significantly reduce the rate of loss of stored soil carbon by 2020.⁵

Targets in Scotland, Wales and Northern Ireland:

No specific targets have been identified for soils and geology. However, across the UK a hierarchy of strategies, policies and legislation underpin the management of land. Some of these enable statutory designation at National and European level, others provide for local designations and appropriate management, with the aim of conserving and protecting the quality of habitats, geology and soils.

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Soil and Geology

The Scottish Soil Framework sets out the vision for soil protection in Scotland, and formally acknowledges the important services soils provide to society. The Framework does not include policies or targets, but sets out actions for soil protection.

There are a number of European directives that are either currently being implemented or are under discussion that may influence the way in which land contamination is managed in the future (i.e. the Environmental Liabilities, Soil, Water, Groundwater and the Waste Framework Directives). The implementation of these regimes into UK legislation is likely to affect how contaminated land is dealt with.¹

MOD Targets:

- By 2010, the MOD will establish an estate-wide Land Quality Assessment (LQA) programme to make sure resources are prioritised effectively and to allow improved reporting in this area.

Water

National Trends:

The current trend in water condition is generally towards increased water quality across natural environments, drinking water and bathing waters.¹ Current climate change predictions indicate that rainfall patterns will become increasingly seasonal, with lower amounts of flow in the summer. This will lead to lower summer river flows, especially in those catchments with a low groundwater component. This could lead to increased abstraction pressure, increased stress on sensitive hydrological systems and a decrease in dilution potential leading to a failure against water quality targets. Increased flooding and storm events also have the potential to increase runoff of pollutants into controlled waters, thus reducing water quality. Population pressures are predicted to increase in certain parts of Great Britain, for example in the south east. Increased population density will result in an increased pressure on natural resources and could exacerbate current problems or cause new ones.

The Environment Agency's Catchment Abstraction Management Strategies (CAMS) have identified a number of catchments in England and Wales which are designated as Over-Licensed or Over-Abstracted. Climate change is likely to result in lower summer rainfalls and more frequent/severe winter flood events. Such changes are likely to increase pressure on summer freshwater water availability and increase pollutant runoff into controlled waters during flood events. Unsustainable groundwater and surface water abstraction may contribute to environmental damage of rivers and wetlands at 500 sites in England and Wales, important conservation sites, including sites of national and international conservation importance.

The Marine and Coastal Access Act (2009) allows for the creation of Marine Conservation Zones (MCZs) in Great Britain (Northern Ireland MCZs will be introduced through separate legislation). MCZs will protect nationally important marine wildlife, habitats, geology and geomorphology. Sites will be selected to protect the range of marine wildlife.² This should lead to greater protection and improvement of marine habitats in the future.

Under the revised Bathing Water Directive all bathing waters will be required to achieve at least 'sufficient' quality by 2015, which is twice as stringent as the current mandatory standard. The overall quality of bathing waters is therefore likely to increase as water quality is improved to meet the increased standards.³

The main sources of radioactivity in water are discharges from the nuclear sector and hospitals and the offshore oil and gas industry which discharges naturally occurring radionuclides. 'Charting Progress 2' indicates that received doses of radioactivity to both humans and wildlife continue to be well within regulatory limits.⁴

Trends in Scotland:

In Scotland, the percentage of rivers of good quality has remained stable at around 88 per cent between 2000 and 2006, based on a combined chemical, biological and aesthetic assessment.¹ In

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Water

most cases the risks to water quality are declining, the exception being groundwater. Local circumstances create local trends, e.g. upland lochs are particularly sensitive to environmental changes. The most important trends are the sources of effects. Environmental effects from industry are declining, whereas effects from urban development and intensification are increasing.⁵

Trends in Wales:

In 2008, 88 per cent of rivers in Wales were of good biological quality. In all years since 1993 over 90 per cent of rivers in Wales have been of good chemical quality.¹

Trends in Northern Ireland:

In 2006, 54 per cent of rivers in Northern Ireland were of good biological quality, and 74 per cent of rivers were of good chemical quality.¹

There has been some reduction in chemical pollution of NI rivers in recent years and the quality of the bathing waters around NI coasts is improving. The biological quality of NI rivers has deteriorated in recent years and levels of nutrients are relatively high in lakes and some rivers.⁶

MOD trends:

In March 2009 water use had already reduced by almost 25%, against the 2004/05 baseline, due to leakage reduction, against a Government target of 25% by 2020.⁷

UK strategy for radioactive discharges projected liquid discharges for 2001 to 2020 from the defence sector⁸:

- tritium levels are projected to fall from around 700 GBq/yr in 2001-2005 to around 400 GBq/yr by 2016-2020;
- total Beta levels are projected to fall from around 5 GBq/yr in 2001-2005 to around 3 GBq/yr by 2016-2020; and
- total Alpha levels are projected to fall from around 0.1 GBq/yr in 2001-2025 to around 0 GBq/yr by 2016-2020.

National Targets:

The Environment Agency aims that by 2030 water use per person in England should fall by 130 litres/day.⁹

The Water Framework Directive (Directive 2000/60/EEC) requires that river basin management plans are prepared by December 2009. The objectives of the river basin management plans are required to be achieved by 2015.⁹ Those objectives are to:

- prevent deterioration, enhance and restore bodies of surface water, achieve good chemical and ecological status of such water and reduce pollution from discharges and emissions of hazardous substances;
- protect, enhance and restore all bodies of groundwater, prevent the pollution and deterioration of groundwater, and ensure a balance between groundwater abstraction and replenishment; and
- preserve protected areas.

Defra aims that by 2030 at the latest, England has improved the quality of our water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from its taps; sustainably manage risks from flooding and coastal erosion, with greater understanding and more effective management of surface water; ensure a sustainable use of water resources, and implement fair, affordable and cost reflective water charges; cut greenhouse gas emissions; and embed continuous adaptation to climate change and other pressures across the water industry and water users.¹⁰

Environment Agency aims to enhance water supply by up to 1100 Ml/d above present levels by the improvement of existing schemes and the development of some new resources.¹¹

Targets in Scotland, Wales and/or Northern Ireland:

The Scotland river basin district objective is to improve water quality such that 98% of surface water bodies and 94% of ground water bodies will be of good or better condition by 2027.¹² By 2027 the

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Water	
<p>objective for the Solway Tweed river basin district is for 92% of surface water bodies and 93% of groundwater bodies to be of good or better quality.¹³</p> <p>No overarching national targets were identified for Wales or Northern Ireland. Under the WFD the objectives of each of the river basin management plans are required to be achieved by 2015.</p> <p>MOD targets:</p> <p>Reduce water consumption by 25% on the Office and non-Office Estate by 2020, relative to 2004/2005 levels (SOG target). Reduce water consumption to an average of 3m3 per person/year for all office builds or major office refurbishments⁷</p>	

Air	
<p>National Trends:</p> <p>The current trend in air condition is generally towards improved air quality, both in rural and urban settings.¹</p> <p>Between 1990 and 2008 there is no clear long-term trend in ozone levels with increases in urban background ozone levels of 40.5%, however between 1980 and 2007 nitrogen oxides (NOx) fell by 42 per cent, particulates (PM₁₀) fell by 59 per cent and sulphur dioxide (SO₂) by 84 per cent (between 1990 and 2007).⁴</p> <p>Reductions are a product of: improved technology; changes in energy generation; targeted air quality management policies; and reductions in specific greenhouse gases, CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).</p> <p>Projections of UK total emissions:²</p> <p>Best case scenario (full air quality target compliance):</p> <ul style="list-style-type: none"> • NOx: 2010 = 1136.4 ktonnes/yr; 2015 = 963.1 ktonnes/yr; 2020 = 799.1 ktonnes/yr; and • PM10: 2010 = 133.5 ktonnes/yr; 2015 = 129.4 ktonnes/yr; 2020 = 134.4 ktonnes/yr. <p>Worst case scenario (extension of 2003 baseline):</p> <ul style="list-style-type: none"> • NOx: 2010 = 1151.0 ktonnes/yr; 2015 = 1030.3 ktonnes/yr; 2020 = 910.7ktonnes/yr; and <p>Trends in Scotland:</p> <p>In general, recent years have seen a marked improvement in Scotland's air quality. In particular, levels of pollutants associated with motor vehicle and industrial emissions have declined significantly over the past decade. There has been a smooth and clear long-term improvement in NOx concentrations due to the progressive reductions in emissions from combustion sources delivered by UK and EC policies.⁶</p> <p>There has been an increase in background ozone over time; this is small but detectable at rural and remote locations in Scotland, but dramatic and relatively clear at urban background locations.⁶</p> <p>There has been a general decline in urban background PM₁₀ concentrations since 1992, but that - for the last few years - concentrations have hovered around the 18 µg/m³ annual mean objective level.</p> <ul style="list-style-type: none"> • PM10: 2010 = 134.9 ktonnes/yr; 2015 = 135.4 ktonnes/yr; 2020 = 143.5 ktonnes/yr <p>Trends in Wales:</p> <p>There is a 'clear improvement' in the following Welsh air quality indicators: sulphur dioxide; nitrogen oxides; fine particulates; Non Methane Volatile Organic Compounds (NMVOC); carbon monoxide; and ammonia. There has also been an improvement in the area of natural and semi-natural habitat where deposition of acid exceeds critical loads.</p> <p>The following indicators were rated 'stable' or they showed no clear trend:</p> <ul style="list-style-type: none"> • number of days when air pollution is moderate or higher in rural zones and urban 	<p>References:</p> <ol style="list-style-type: none"> 1. Defra, Sustainable Development Indicators, 2009, http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf 2. UK Air Quality Archive, Updated Projections of Air Quality in the UK for Base Case and Additional Measures for the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007, http://www.airquality.co.uk/report_s/reports.php?action=category&action_id=17 3. UK Air Quality Achieve, http://www.airquality.co.uk/standards.php 4. Defra, Environment in your Pocket Statistics, 2009, http://www.defra.gov.uk/evidence/statistics/environment/eiyp/ 5. http://www.scottishairquality.co.uk/reports.php?n_action=report2 6. Air Pollution in Scotland, http://www.scottishairquality.co.uk/documents/reports2/240090518_AQ_in_Scotland_2006_4F_JB_FF.pdf 7. Welsh Air Quality Forum; Air Pollution in Wales, http://www.welshairquality.co.uk/documents/news/322100927_AQ_Wales_15_English_web.pdf 8. Northern Ireland Department of Environment; Air Quality, http://www.airqualityni.co.uk/reports.php?n_action=trend



Air	
<p>agglomerations;</p> <ul style="list-style-type: none"> air concentrations of Heavy Metals; and area of natural and semi-natural habitat where deposition of nitrogen compounds exceeds critical loads.⁷ <p>Trends in Northern Ireland:</p> <p>Recent years have seen a marked improvement in Northern Ireland's air quality. In particular, levels of pollutants associated with coal and oil combustion have reduced significantly over the past twenty years.</p> <p>Air quality data indicates that there has been a general reduction in urban background PM₁₀ concentrations since 1990.</p> <p>Mean ozone concentrations in Northern Ireland do not appear to show any clear overall trend over the same period, although there is distinct year-to-year fluctuation. This is consistent with UK-wide observations, and the understanding that concentrations of this pollutant are strongly dependent on summer temperatures and weather conditions.</p> <p>There are no clear trends in nitrogen dioxide concentration at the monitored sites. Areas which currently exceed the Air Quality Strategy Objective for annual mean NO₂ are therefore likely to continue to do so, in the absence of actions to reduce concentrations of this pollutant.⁸</p>	

Climate Change and Energy Use	
<p>National Trends:</p> <p>The current trend in energy use is generally towards increased consumption, however there have been some slight declines in recent years associated with mild winters. Since 1980 UK energy consumption by individual sectors has changed substantially: there have been rises of 68% for transport, 10% for the domestic sector and 3% for the service sector, whilst consumption by industry has fallen by 34%².</p> <p>UKCP09 medium emission scenario with 90% probability:³</p> <ul style="list-style-type: none"> 2080 mean winter temperature: the central estimates of change are projected to be generally between 2 and 3°C across most of the country, with slightly larger changes in the south east and slightly smaller in the north west of Britain.³ 2080 mean summer temperature: a more pronounced south to north gradient exists with changes in some parts of southern England being just over 4°C and in parts of northern Scotland about 2.5°C.³ 2080 mean summer daily maximum temperature: central estimates show a gradient between parts of southern England, where they can be 5°C or more, and northern Scotland, where they can be somewhat less than 3°C.³ 2080 mean annual precipitation: shows little change (few percent or zero).³ 2080 mean winter precipitation: increases are in the range +10 to +30% over the majority of the country. Increases are smaller than this in some parts of the UK, generally on higher ground.³ 	<p>References:</p> <ol style="list-style-type: none"> BERR, UK energy in brief, 2010, http://www.decc.gov.uk/assets/decc/Statistics/publications/brief/190-uk-energy-in-brief-2010.pdf UK Climate Projections, UKCP09, Briefing Report http://ukclimateprojections.defra.gov.uk/content/view/516/500/ OPSI, Climate Change Act 2008, http://www.opsi.gov.uk/acts/acts/2008/ukpga_20080027_en_1 MOD, Sustainable Development Report and Action Plan, 2009, http://www.mod.uk/NR/rdonlyres/F9E34976-9E39-4E0D-BADA-157975DF2118/0/stewardshipprpt200809v7.pdf DTI, White Paper: 'Our Energy Future: Creating a Low Carbon Economy', http://webarchive.nationalarchives.gov.uk/tna/+http://www.dti.gov.uk/files/file10719.pdf/ DECC, The UK Low Carbon Transition Plan: National

¹ Work is ongoing with Defra to define Carbon Neutrality and how this can be delivered. These targets will be reviewed in light of the ongoing work on the definition of carbon neutrality.



Climate Change and Energy Use

- 2080 mean summer precipitation: general south to north gradient, from decreases of almost 40% in SW England to almost no change in Shetland.³
- The range of absolute sea level rise around the UK (before land movements are included) and across the three emissions scenarios is projected to be between 12 and 76 cm for the period 1990 - 2095, which is a wider spread than that of the global average. (The unlikely but plausible High++ scenario predicts levels of 93 cm to 1.9 m by 2100).³
- The projected long-term future trends in storm surge that we find in UKCP09 are physically small everywhere around the UK, and in many places can be accounted for by natural variability. The surge level we expect to be exceeded on average once in 2, 10, 20 or 50 yr is not projected to increase by more than 9cm by 2100 anywhere around the UK coast (not including the mean sea level change). The largest trends are found in the Bristol Channel and Severn Estuary.³
- Seasonal mean and extreme waves are generally expected to increase to the South West of the UK, reduce to the north of the UK and experience a small change in the southern North Sea. Changes in the winter mean wave height are projected to be between -35 and +5 cm. Changes in the annual maxima are projected to be between -1.5 and +1 m.³
- The shelf seas around the UK are projected to be 1.5-4°C warmer and ~0.2 practical salinity units (p.s.u.) fresher (lower salinity) by the end of the 21st century for a medium emissions scenario.³

Trends in Scotland:

Since 1914 average temperatures in Scotland have risen by 0.5°C. Northern Scotland has warmed at a slower rate than the rest of the country, with average increases in temperature only being significant in spring. In northern Scotland, there has been little change in winter temperatures since 1914. Temperatures have increased in every season and in all parts of Scotland since 1961. This has been the fastest period of warming observed over the 1914 to 2004 period analysed in this study. Since 1961 average spring, summer and winter temperatures have risen by more than 1°C. Since 1961 average daily maximum temperatures have been increasing at a faster rate than average minimum, or night time, temperatures in Scotland. Globally, over approximately the same period, it is minimum temperatures that have increased at the faster rate. It is interesting to note that conversely the trend in Scotland over the 1914 to 2004 period also has the minimum temperatures increasing at the faster rate.

Scotland has become wetter since 1961, with an average increase of almost sixty percent in winter months in northern and western Scotland. For the majority of the country there has not been a large-scale significant change in average summer rainfall although some parts of north west Scotland have become up to forty five percent drier in summer. Contrary to the Scottish national trend, Aberdeenshire has seen little change in precipitation in winter months although this is compensated for in this region by a significant increase in precipitation in autumn (September-November).

Heavy rainfall events have increased significantly in winter, particularly in northern and western regions.

The snow season has shortened across the country since 1961, with the season starting later and finishing earlier in the year. The greatest reductions have occurred in northern and western Scotland.

Since 1961 there has been more than a twenty-five percent reduction in the number of days of frost (both air and ground frost) across the country. At the same time, the growing season length has increased significantly, with the greatest change occurring at the beginning of the season.¹⁵

Trends in Wales:

Estimated emissions of greenhouse gases in Wales reduced from 50.2 million tonnes of carbon dioxide (CO₂) equivalent in 2006 to 46.8 million tonnes of CO₂ equivalent in 2007. CO₂ emissions estimates also reduced from 41.9 million tonnes in 2006 to 39.0 million tonnes in 2007. Total non-CO₂ greenhouse gases reduced from 8.2 million tonnes in 2006 to 7.8 million tonnes in 2007. CO₂ emissions will continue to decrease. Emissions of greenhouse gases are expected to continue at a rate below the rate set at the base year. Emissions of total non-CO₂ greenhouse gases are expected to continue to decrease.

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Climate Change and Energy Use

Climate change could cause significant environmental effects in Wales. The UK Climate Programme (2009) modelled the effect of different climate emissions scenarios on climate. For western Britain including Wales, the central estimate (50% probability of occurring) indicates that there will be an increase in the amount of winter rainfall by around +33%, and an increase in average summer temperatures of 2.7-4.1°C (depending on location). It is also forecast that there will be an increase in the number of dry periods exceeding 10 days during summers and the number of extreme hot days. Sea levels are also forecast to rise, with Relative Sea Level in Cardiff forecast to be approximately 45cm greater than 1990 levels by 2095.

Trends in Northern Ireland:

Since 1990, Northern Ireland's total greenhouse gas emissions have decreased by 12.6%. This is less than the reduction seen for the UK as a whole, which has seen a decrease of 18.4% on 1990 levels.

The mean annual minimum and maximum temperature for Northern Ireland has been calculated from the Armagh Observatory temperature records:

- the 10 year moving average trend line shows that the annual minimum and maximum temperatures reached a low towards the end of the 19th century, and has been steadily increasing since;
- since 1990, the 10 year moving average mean annual minimum temperature has risen to its highest levels since the temperature records began;
- 1997 had the highest mean annual minimum temperature recorded in the period up to 2008 (7.02°C);
- the lowest mean annual minimum temperature (3.95°C) recorded in the period up to 2008 was recorded in 1879;
- in the last 10 years, the average annual maximum temperature has continued to slowly increase.
- 2007 had the highest mean annual maximum temperature recorded in the period up to 2008 (14.44°C); and
- the lowest mean annual maximum temperature (10.74°C) in the period up to 2008 was recorded in 1879.

These changes are expected to accelerate over the coming century. Average temperatures may rise by 3°C or more; summer rainfall may fall by up to 50%; while winters may be 25% wetter. Cloud cover and relative humidity is predicted to reduce annually and in all seasons, particularly summer. Relative sea level is also predicted to rise.¹⁶

National Targets:

The Climate Change Act requires an 80% cut in UK greenhouse gas emissions by 2050 (compared to 1990 levels).⁴ DECC aims to put the UK on a path to a low carbon UK by cutting CO₂ emissions; investing in energy efficient and clean technologies, maintain secure energy supplies; and protecting the most vulnerable.⁶

The UK is committed to delivering 20% of its energy from renewable sources by 2020.^{7,8}

There are plans for a new generation of nuclear power stations in the UK.¹

DECC aims for no homes to be in fuel poverty by 2016-2018.⁶

Targets in Scotland:

Scotland has set a clear path to achieving its target of reducing emissions by 42 per cent by 2020. Annual targets have been set for 2011- 2022.¹⁶

The Scottish Executive set targets in 2007 that 18% of electricity generated in Scotland should come from renewable sources by 2010 rising to 40% by 2020¹⁷.

Scotland's existing target was established in 2007 and, aided by a rapid expansion in wind power, the country is on course to exceed its interim target of 31 per cent in 2011. The Scottish Government has now calculated that significantly higher levels of renewables could be deployed by 2020 with little

Website,
<http://www.scotland.gov.uk/Topics/Environment/climatechange/scotland-action/climatechangeact/targets>



Climate Change and Energy Use	
<p>change to the current policy, planning or regulation framework in Scotland now 80 per cent of Scottish electricity consumption to come from renewables by 2020.¹⁸</p> <p>The 2020 Climate Change Act establishes an interim target for 2020 of at least 42 per cent reductions in emissions.¹⁹</p> <p>Wales:</p> <p>One Wales: A Progressive Agenda for Wales, commits to annual reductions in greenhouse gas emissions of 3% per year in areas of devolved competence by 2011. This target:</p> <ul style="list-style-type: none"> • relates to the “basket” of six greenhouse gases - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride; and • includes all ‘direct’ greenhouse gas emissions in Wales (except those from heavy industry and power generation) and it also includes the emissions associated with electricity consumption, allocated to end-users in Wales. <p>Consequently, the 3% target covers approximately 69% of total greenhouse gas emissions in Wales.</p> <p>To measure the target, Wales will compare the relevant emissions in each year from 2011 onwards to a baseline. This baseline will be an average of the relevant emissions between 2006 and 2010. Beginning with a 3% reduction in 2011, the target is to reduce greenhouse gas emissions by an additional 3% of the baseline in each year.</p> <p>Wales are also committed to achieving at least a 40% reduction in all greenhouse gas emissions by 2020 against a 1990 baseline.</p> <p>Northern Ireland:</p> <p>In January 2008, Office of the First Minister and Deputy First Minister (OFMDFM) published the 2008 - 2011 Programme for Government which set a target for a 25% decrease in Northern Ireland's total greenhouse gas emissions by 2025.¹¹</p> <p>The Northern Ireland Renewables Obligation, published in October 2004, sets a target that by 2012, 12% of all electricity consumed in Northern Ireland is generated from indigenous renewable sources, for example wind farms.¹²</p> <p>MOD Target:</p> <p>Reduce carbon dioxide emissions from buildings across the non-operational Estate by 12.5%, by 2010-11 and by 30% by 2020, relative to 1999/2000 baseline (SOGE target).⁵</p> <p>Source at least 15% of our total non-operational electricity needs by 2010 from good quality Combined Heat and Power Systems (SOGE target).⁵</p> <p>Source at least 10% of our total electricity needs from renewable sources by 2010 (SOGE target for MOD).⁵</p> <p>Ensure the MOD Office Estate and all Top Level Budget Holders' Head Offices are carbon neutral by 20121 (MOD Commitment against SOGE).⁵</p>	

Flooding and Coastal Change	
<p>National Trends:¹</p> <p>Forecasts suggest that there will be considerable variation in erosion rates, both between and within regions. Many areas will experience little or no erosion of shorelines while others experience erosion of several hundred metres. Future erosion will be consistently severe on the east coast and major estuaries such as the Severn, Thames and Humber. As the erosion rates will (to first order) depend on the climate, although the national value of built assets directly at risk from coastal erosion is substantially lower than those at risk from coastal flooding, coastal flood risk is itself heavily influenced by the rate of coastal change.⁶</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Defra (2010) Measuring Progress - Sustainable Development Indicators 2010 2. SNIFFER (2009) Current environmental baseline and trends for water - SCOTLAND http://www.seaquidance.org.uk/Upload/Documents/L3EX2Currentstateandtrendsforscotland.pdf



Flooding and Coastal Change

Almost two-thirds of the intertidal profiles in England and Wales have steepened over the past hundred years, a process which is particularly prevalent on coasts protected by hard engineering structures (this represents 46% of England's coastline; 28% of Wales; 20% of Northern Ireland and 7% Scotland). Both coastal erosion and steepening of intertidal profiles effects are expected to increase in the future due to the effects of climate change, especially sea-level rise and changes to the wave conditions.⁴

The total number of properties in England and Wales at risk of flooding saw an apparent increase of 23% between 2004 and 2009. However, with improvements to data collection methodology; revisions to modelling techniques; and reduced flood risks resulting from flood management works, year on year changes should be interpreted with caution.

Current climate change predictions indicate that rainfall patterns will become increasingly seasonal. This could lead to increased flooding and storm events.

The third assessment of the IPCC presented a range of projected sea-level rise between 1990 and 2100 of 9-88cm⁴. The most recent information for the UK from UKCIP forecasts a range of relative sea level rise by the 2080s (relative to the 1961-1990 mean) of between 20 and 80cm in south-west England and 0 and 60cm in Scotland.⁵

The scenarios in UKCIP 09 lead to several predictions relevant to flooding:

- Annual average precipitation across the UK may decrease by between 0% and 15% by the 2080s, depending on the scenario.
- The seasonal distribution of precipitation will change. Winters will become wetter and summers drier. The biggest relative changes will be in the south and east. Under the High emissions scenario, winter precipitation in the south-east may increase by up to 30% by the 2080s.
- By the 2080s, the daily precipitation intensities that are experienced once every two years on average may become up to 20% heavier. The scenarios give no guidance on the effects of climate change on more extreme precipitation events.
- By the 2080s, depending on scenario, relative sea level may be between 2cm below and 58cm above the current level in western Scotland and between 26 and 86cm above the current level in south-east England.
- For some coastal locations, a water level that at present has a 2% annual probability of occurrence may have a 33% annual probability by the 2080s for Medium High emissions.⁷

Trends in Scotland²:

Urban development is placing greater demands on urban drainage systems. Flooding due to loss of floodplains from agriculture is manageable under current and new policies. An increase in frequency and severity of flooding due to climate change is likely.

Trends in Wales:

An increase in flooding (in both severity and frequency) can be expected as a result of development and the effects of climate change.

Trends in Northern Ireland:³

With increasing development and climate change the number of properties at risk is likely to increase.

National Targets:

Defra aims that by 2030 at the latest, England sustainably manages risks from flooding and coastal erosion, with greater understanding and more effective management of surface water.

Targets in Scotland, Wales and Northern Ireland:

No targets have been identified in relation to contaminated land for Scotland, Wales and Northern Ireland.

- [PDF](#)
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Material Assets (Transport)**National Trends:**

The current trend in transport infrastructure is generally towards increased transport journeys. Road traffic in Great Britain has grown by 85% since 1980; rail travel has increased by nearly 70% since 1980; bus travel has increased over the last eight years (having fallen between 1980 and the mid 1990s); freight tonne kilometres moved in the UK has increased 40% since 1980; however walking and cycling for travel purposes have both declined significantly over the period 1996 - 2007.¹

Freight moved (tonne-kilometres) increased roughly in line with economic growth (Gross Domestic Product) until 1998. Since then freight moved has remained stable while GDP has increased by 28 per cent.²

Trends in Wales:

All commentators suggest that transport demand is likely to continue to rise with a continued rise in personal mobility. For example, rail passenger kilometres travelled are projected to increase by 33% between 2000 and 2010, road traffic is expected to increase by 31% between 2003 and 2025 and aviation demand is expected to more than double by 2030. The average distance people travel each year in Wales is continuing to grow at a considerable rate. Stockholm Environment Institute (SEI) predict that the land transport footprint per capita will increase by 6% 2020 or 12% if air travel is included. There is expected to be a continued high dependence on fossil fuels, with only gradual reduction of road emissions via clean electricity and hydrogen fuel cells, bio-fuels or diesel/petroleum hybrids. Aviation kerosene can be made from biomass.⁵

Trends in Scotland:

On average, Scots travelled 7,056 miles per person per year within Great Britain in the two-year period 2007/2008. There has been a large rise in the distance travelled, with most of the increase being due to travel by car. Over about 20 years, the average distance travelled per person per year increased by 2,404 miles, of which 2,020 were by car. Other National Travel Statistics results for 2007/2008 include average distances travelled per Scottish resident per year of 478 miles by local bus as the main mode for the journey, 541 miles by surface rail, 171 miles by foot, 52 miles by taxi and 30 miles by bicycle.⁵

The Scottish Household Survey shows that the percentage of people travelling by car/van has decreased from 68 to 66 per cent with both the number of driver and passenger journeys showing falls in 2008.⁵

The total number of motor vehicles licensed in Scotland was over 2.7 million at the end of 2008. It has increased steadily over the years, with rises of 30 per cent since 1998, 26 per cent since 1999 and 23 per cent since 2000. However, there were fewer vehicles per 100 population in Scotland (52) than in Great Britain (58) in 2008.⁵

Traffic volume on Scotland's roads has tended to increase steadily - an overall increase of 18 per cent since 1996, the slight dip in 2000 was due to the fuel price protests. The volume of traffic on Motorways has grown by 46 per cent since 1996, in part due to the expansion of the Motorway network.⁵

Trends in Northern Ireland:

Over the time period 2007-2009, each person in Northern Ireland travelled on average 6,002 miles per year (approximately 16 miles travelled per day), similar to 2006-2008 (6,033 miles). On average, there were 914 journeys made per person per year over the period 2007-2009 (approximately three journeys per day). There was no real difference when compared to 2006-2008 (926 journeys per person per year). The average journey length for the period 2007-2009 was 6.6 miles, similar to the journey length for 2006-2008 (6.5 miles). During 2007-2009, the longest journey length was for train journeys, averaging 20.6 miles. In contrast, the shortest journeys were walks which were 0.8 miles on average.

The number of road deaths occurring as a result of reported road traffic collisions increased by 7% from 107 in 2008 to 115 in 2009.⁷

During 2009-10, there were 10 million rail passenger journeys made, a decrease of 2% from 2008-09.⁷

In 2009, Belfast International Airport was the 13th busiest commercial airport in the UK with

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Material Assets (Transport)

4.5 million terminal passengers. This accounted for 2% of all UK terminal passengers. George Best Belfast City airport was the 16th busiest UK commercial airport with 2.6 million terminal passengers, 1% of all UK terminal passengers.⁷

National Targets:

The Department for Transport (DfT) aims to:³

- maximise the overall competitiveness and productivity of the national economy, so as to achieve a sustained high level of GDP growth;³
- reduce transport's emissions of CO₂ and other greenhouse gases, with the desired outcome of avoiding dangerous climate change;³
- contribute to better health and longer life expectancy through reducing the risk of death, injury or illness arising from transport, and promoting travel modes that are beneficial to health;³
- improve quality of life for transport users and non-transport users, including through a healthy natural environment, with the desired outcome of improved well-being for all;³
- promote greater equality of transport opportunity for all citizens, with the desired outcome of achieving a fairer society; and³
- by 2010, increase the use of public transport (bus and light rail) by more than 12 per cent in England compared with 2000 levels, with growth in every region;⁴
- Reduce the number of people killed or seriously injured in Great Britain in road accidents by 40 per cent and the number of children killed or seriously injured by 50 per cent, by 2010 compared with the average for 1994-98, tackling the significantly higher incidence in disadvantaged communities.⁴

No targets have been identified in relation to contaminated land for Scotland, Wales and Northern Ireland.

Material Assets (Waste Management)**National Trends:****Radioactive waste arisings:**

There is currently a trend of increasing volumes of low level radioactive waste generated in the UK, predominantly due to dismantling of decommissioned nuclear sites. This trend for existing waste is not expected to be sustained into the long term as 95% of the total projected nuclear waste arisings for the next century have already been produced (excluding arisings from planned new build nuclear power stations).¹

NDA radioactive waste projections for the UK (excluding new build nuclear power stations) are set out below.¹

Waste type	Volume (cubic metre)		
	Stocks at 1 April 2007	Estimated future arisings ⁽¹⁾	Lifetime total once all wastes are packaged
HLW	1,730	-646 ⁽²⁾	1,420
ILW	92,500	143,000	364,000
LLW	196,000	3,000,000	3,470,000

⁽¹⁾ These figures assume no new nuclear power stations. There are not currently projections which include new nuclear power station arisings.

⁽²⁾ Future arisings of HLW have negative volumes. This is because Sellafield has reported future arisings of HLW to show that the volume of accumulated waste (liquid plus vitrified product) will fall as

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5. [Commercial and Industrial Waste in England: Statement of aims and actions 2009, Defra, October](#)



Material Assets (Waste Management)

liquid waste existing at 1 April 2007 and forecast in the future is conditioned to a vitrified product.

NDA radioactive waste projections for England (excluding new build nuclear power stations) are set out below:¹

Waste type	Volume (cubic metre)		
	Stocks at 1 April 2007	Estimated future arisings ⁽¹⁾	Lifetime total once all wastes are packaged
HLW	1,730	-646 ⁽²⁾	1,420
ILW	80,700	112,000	298,000
LLW	186,000	2,670,000	2,980,000

⁽¹⁾ These figures assume no new nuclear power stations. There are not currently projections which include new nuclear power station arisings.

⁽²⁾ Future arisings of HLW have negative volumes. This is because Sellafield has reported future arisings of HLW to show that the volume of accumulated waste (liquid plus vitrified product) will fall as liquid waste existing at 1 April 2007 and forecast in the future is conditioned to a vitrified product.

Plans for a new generation of nuclear power stations in the UK are likely to result in increased radiological waste arisings in the future. As yet the volumes of waste have not been quantified. However disposal is expected to be met nationally, with appropriate capacity planned into deep geological disposal infrastructure.³

Non-radioactive waste arisings:

Waste management in the UK is moving towards greater reuse and recycling and less landfill. Between 2002 and 2007 in the UK, there was 19.5% decrease in waste disposed of in landfill sites. This includes waste produced by households, commerce and industry and construction and demolition.⁴

In England, the total amount of waste sent to landfill has decreased from 80,000,000 tonnes annually in 2000/01 to 72, 500,000 tonnes in 2004/05 at licenced landfill sites: with falls from 50% to 44% for industrial and commercial waste between 1998/99 and 2002/03.⁴

Between 1998/99 and 2002/03 there was a 1% reduction in the total amount (in tonnes) of commercial and industrial waste produced in England. Within this total, industrial waste had reduced to 38,000,000 tonnes in 2002/3 while the amount of commercial waste had grown to 30,000,000 tonnes. During this period, the tonnage of commercial and industrial waste sent to landfill has decreased, with more waste handled by transfer stations and treatment facilities.⁵

In 2002/3 for the first time, recycling and reuse had overtaken landfill as the most common method of waste management. Overall 44% was sent to landfill and 45% recycled.

Hazardous waste production in England and Wales has decreased since 2004 by 17%. The majority of the decrease is due to the reduction in liquid inputs to one treatment facility on Teesside in 2009.⁶

Trends in Scotland, Wales and/or Northern Ireland:

Similar to the National Trend, waste management in Scotland, Wales and Northern Ireland is moving towards waste prevention, greater reuse, recycling and composting, and the diversion of as much waste as possible from landfill.

In Scotland, total waste arisings increased by 1,483,444 tonnes between 2004 and 2008. During the same period, however, commercial and industrial waste arisings decreased. The total amount of Scottish Waste sent to landfill decreased from 7,814,879 tonnes to 6,112,198 tonnes over the same five year period.⁷

NDA radioactive waste projections for Scotland (excluding new build nuclear power stations) are set out below:¹

Waste type ⁽¹⁾	Volume (cubic metre)		
	Stocks at 1 April 2007	Estimated future arisings	Lifetime total once all wastes are packaged
ILW	80,670	117,400	44,500

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Material Assets (Waste Management)

LLW	9,480	240,000	385,000
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⁽¹⁾ No HLW is managed in Scotland.

In Wales, the landfilling of all wastes has decreased by 1,409,000 tonnes between 1998/99 (4,377,000 tonnes) and 2007 (2,968,000 tonnes).⁸

Commercial and industrial waste arisings rose slightly in 2007 when compared to the previous year, which reflects the increase in commercial waste production between 2002/03 and 2007 (and may also in part due to inaccuracies in monitoring). However, commercial and industrial arisings have decreased by 13% overall since 1998/99. The amount of commercial and industrial waste disposed of to landfill also continues to reduce; the amount of waste landfilled in 2007 was 57% of the 1998/99 figure.⁸

Industrial waste arisings during the period 2010/11 to 2013/14 are predicted to remain relatively static in Wales, due to likely future decoupling between economic growth and waste growth because of regulatory and economic measures and cultural factors, and the decline, and likely further decline, in the industrial/manufacturing sector in Wales. During the same period, although there is expected to be continued growth in the commercial sector, commercial waste arisings are expected to remain static as further waste reduction/prevention measures are implemented.⁸

NDA radioactive waste projections for Wales (excluding new build nuclear power stations) are set out below:¹

Waste type ⁽¹⁾	Volume (cubic metre)		
	Stocks at 1 April 2007	Estimated future arisings	Lifetime total once all wastes are packaged
ILW	3,100	13,900	21,900
LLW	697	83,400	104,000

⁽¹⁾ No HLW is managed in Wales.

In Northern Ireland, waste production is expected to continue to increase due to economic and population growth. Although, increased reuse, recycling and recovery of waste, and diversion of waste from landfill is expected to continue to increase as waste reduction/prevention measures continue to be implemented.⁹

The 2004/05 Commercial and Industrial Waste Arisings Survey reports an increase in commercial and industrial waste arisings from the previous years (estimated to be around 1,560,371 tonnes). However, it is difficult to draw direct comparisons due to the differences in data collection methods.¹⁰

In Northern Ireland there has also been increases in the proportion of commercial and industrial waste landfilled; 64% of waste was landfilled in 2004/05, compared to 40% and 41% in 2000 and 2002 respectively.¹⁰

There are currently no nuclear licenced sites in Northern Ireland, with only very small quantities of radioactive waste produced from hospitals and industry. However, any new nuclear development in Northern Ireland would increase radiological waste arisings in the future.

Quantities of hazardous waste reduced in both Scotland and Northern Ireland between 2006 and 2009. The quantity in Scotland reduced from 109,995 tonnes to 104,001 tonnes, a decrease of 5.4%. The quantity in Northern Ireland reduced from 19,447 tonnes to 10,773 tonnes, a decrease of 44.6%.

National Targets:

Defra has established targets for England which includes a greater focus on waste prevention seeking to achieve a fall of 50% per person of household waste arising. Recycling and composting of household waste targets have been established - at least 40% by 2010, 45% by 2015 and 50% by 2020; and recovery of municipal waste - 53% by 2010, 67% by 2015 and 75% by 2020.⁴

On the basis of the policies set out in Waste Strategy for England 2007, levels of commercial and industrial waste landfilled are expected to fall by 20% by 2010 compared to 2004. The Government is considering, in conjunction with the construction industry, a target to halve the amount of construction, demolition and excavation wastes going to landfill by 2012.⁴

MOD Target:

Material Assets (Waste Management)

- reduce total waste arisings by 5%, by March 2011, and by 25% by 2020 relative to the 2004/05 baseline (SOGE target)^{11 12} and;
- increase recycling levels to be at 40% of the baseline by March 2011, and to 75% by 2020 (SOGE target).^{11 12}

Targets in Scotland, Wales and/or Northern Ireland:

Under the 'Zero Waste Plan', the Scottish Government has set a long term target of 70% recycling/composting and preparing for reuse of all waste arising in Scotland by 2025, regardless of its source. The Scottish Government has also set a target of no more than 5% of all waste produced to go to landfill by 2025.⁷

'Towards Zero Waste' the Waste Strategy for Wales, sets the following targets for commercial and industrial waste:

- to achieve a reduction in commercial and industrial waste produced equivalent to at least 10% of the 1998 arisings by 2010;
- to reduce the amount of commercial and industrial waste sent to landfill to less than 80% of that landfilled in 1998/99 by 2010; and
- to reduce the amount of biodegradable commercial and industrial waste sent to landfill to less than 80% of that landfilled in 1998/99 by 2010.⁷

'Towards Waste Management', the Northern Ireland Waste Management Strategy for 2006 to 2020, sets the following targets:

- 60% of Commercial and industrial waste to be recycled by 2020;
- 75% of Construction, demolition and excavation Wastes to be recycled or reused by 2020; and
- recycling and composting of household wastes to be at: 35% by 2010; 40% by 2015; and 45% by 2020.¹³

Material Assets (Land Use and Materials)

National Trends:

The current trend in land use is generally towards increased development on previously-developed land accompanied by a decline in stocks of previously developed land available for redevelopment.

The percentage of all new development occurring on previously-developed land measured by land area) increased from 47% in 1990 to 52% in 2006.¹ A more recent figure is not available in the latest Defra statistic report published in 2010. However, the percentage of new dwellings built on previously developed land, or through the conversion of existing buildings, increased from 54% in 1990 to 70% in 2003, and then to 80% in 2009 (provisional estimate).²

Between 2002 and 2008 the total amount of previously-developed land in England declined by around 4%. In the same period vacant and derelict land declined by 20%, while land currently in use with potential for redevelopment increased by around 23%.⁴

Agricultural land use has increased (following on from a 3% increase of crop area and a 6% increase of grazing area between 1996 and 2008)⁴. There is also a fall in the amount of set aside land (which decreased by 14% between 1996 and 2007) as crop prices have increased.⁵ Land use for forest and woodland is currently showing an upward trend, with around a 4% increase between 1996 and 2008.⁴

In England between 1989 and 2009 there has been a general trend of increasing development of residential buildings on previously developed land. There has also been a decline in development on agricultural land in favour of redevelopment of existing residential areas.⁶

MOD trend - The number of new build and refurbishment projects achieving the to achieve an excellent rating against the Defence Related Environmental Assessment Methodology (DREAM), the

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Material Assets (Land Use and Materials)

Building Research Establishment's Environmental Assessment Method (BREEAM) or equivalent (SOGE mandate) rating has improved from 50% of all projects assessed in 2006/2007, to 100% of new build and 78% of refurbishment projects for completed assessments undertaken in 2007/08.⁷

Trends in Scotland, Wales and/or Northern Ireland:

Similar to the national trend, land management in Scotland, Wales and Northern Ireland is focusing on the redevelopment of previously developed land where possible.

In Scotland, since 2002 there has been a total increase of 217ha of derelict and urban vacant land, from 10,646ha in 2002 to 10,863ha in 2009. This is attributable to the land that has been brought back into productive use or removed due to naturalisation being balanced by a small number of large sites falling out of use. Since 2002, an average of 580ha of derelict and urban vacant land was brought back into use each year. The 2009 survey recorded 384ha of derelict and urban vacant land being reused since 2008.

The area of Broadleaved Woodland, Improved Grassland and Acid Grassland Broad Habitats increased by 19.5% in Scotland between 1998 and 2007. There was a corresponding decrease of 7.1% in the area of Coniferous Woodland. The area of the Arable and Horticulture Broad Habitat decreased by 13.6% between 1998 and 2007. There was a corresponding increase of 9.1% in the area of Improved Grassland, but no significant increase in the area of Neutral Grassland across Scotland as a whole. The changes in the areas of Broad Habitats in Scotland reflect short-term influences, such as agricultural economics, and medium term influences, such as woodland planting and harvesting.⁹

In Wales, between 1998 and 2007 the area of built land has increased by 12.5%. Most Broad Habitats did not change significantly in area between 1998 and 2007 when averaged across Wales as a whole. However, a number of statistically significant changes in area have been noted between 1998 and 2007. In the lowland zone of Wales Broadleaved, Mixed and Yew Woodland increased, and in the upland zone, Arable and Horticultural Land increased, Neutral Grassland decreased and Acid Grassland increased. The possible drivers of these changes are unknown and require further research.⁹

In Northern Ireland, the most recent Countryside Survey showed that semi-natural habitat continues to decline, although the rate of loss has slowed from 1998. Agricultural land use and rural building continue to be the main processes resulting in habitat loss. From 1998 to 2007 the total area of Urban/Built-up Areas has increased by over 30%.¹⁰ There has been a reduction in habitat diversity throughout lowland and upland landscapes, probably as a result of agricultural intensification. Woodland and scrub habitat, however, has increased as a result of conifer and woodland planting.¹¹

No baseline data has been identified in relation to previously developed land in Wales and Northern Ireland and therefore trends could not be established. However, similar to National Trends, it is expected that current trend in land use is generally towards increased development on previously-developed land.

National Targets:

No specific targets have been identified for land use; however, across the UK a hierarchy of strategies, policies and legislation underpin the management of land.

MOD Targets:

All new build and major refurbishment construction projects will be designed to achieve an excellent rating against the Defence Related Environmental Assessment Methodology (DREAM), the Building Research Establishment's Environmental Assessment Method (BREEAM) or equivalent (SOGE mandate).⁶

Targets in Scotland, Wales and/or Northern Ireland:

The Scottish Government are in the process of developing a Land Use Strategy (draft consultation version is available). The Strategy will set out a vision and long term objectives for an integrated approach to sustainable land use in Scotland.¹¹

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Cultural Heritage

National Trends:

The current trend in cultural heritage condition is generally towards little change in the number of historic assets and a decline in the percentage of historic assets at risk.¹

English Heritage report that there has been little change in the total number of historic assets between 2002 and 2009; the total number of listed buildings in England has increased by 0.9% during this period with the largest increase in Grade 2* (1.4%). The number of Scheduled Monuments has increased by 1.9% over the same period whilst registered parks and gardens increased by 7.3% (104) between 2002 and 2009. The number of Scheduled Monuments increased by 1.9% between 2002 and 2009.¹

The number of Grade 1 and 2* listed buildings at risk has declined from 3.8% in 1999 to 3.1% (969) in 2009.¹

There is a trend of improving condition of MoD cultural heritage assets.²

Between 2005/06 and 2008/09 there was a 28% increase in the number of MoD Scheduled Monuments either in good or fair condition.⁴

There is currently little change in the number of MOD buildings at risk. In 2007 the MOD had 28 Buildings at Risk entries. Since 2007, three buildings have been removed from the list (one by repair, one by disposal and one by transfer to English Partnerships) and three have been added.³

Trends in Scotland, Wales and/or Northern Ireland:

In Wales there has been a small increase in the number of listed buildings (29,866 to 29,889), scheduled monuments (3,909 to 4,111) and conservation areas (511 to 519) between 2006 and 2008. A 2008 report for Cadw found that for a sample percentage of listed buildings in Wales between 2007 and 2008, those classed as 'at risk' fell slightly from 10.2% to 9.6%; those classed as 'vulnerable' fell slightly from 17.5% to 17.3%; and those classed as 'not at risk' increased slightly from 72.4% to 73.2%.⁵

In Northern Ireland there has also been a small increase in Scheduled Monuments (1,423 in 1999/2000 to 1,803 in 2008/09), listed buildings (8,184 in 2003/04 to 8,350 in 2008/09) and conservation areas (57 to 60 between 2002/03 and 2008/09). The number of buildings and monuments at risk has increased between 2003/04 and 2008/09 by approximately 16% to 437.⁶

National Targets:

To reduce the numbers of England's grade I and II* buildings and structural Scheduled Monuments at risk.⁷

Targets in Scotland, Wales and/or Northern Ireland:

No targets identified in relation to cultural heritage in Scotland and Wales.

For Northern Ireland, the NIEA Business Plan sets out:

- Improve the condition of our monuments and listed buildings, including structures currently on the Built Heritage at Risk Register (BHARNI).⁸
- Save at least 45 buildings or scheduled monuments on the BHARNI by March 2011, contributing to the target of saving 200 structures in 10 years i.e. by 2016.⁸

MOD Targets:

The effects of the SDSR may impede MOD's to maintain its' historic estate at the same level in the future, especially where features have no practical use.

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Landscape	
<p>National Trends:</p> <p>Over the last century the following landscape character trends have been experienced: ¹</p> <ul style="list-style-type: none"> • a gradual erosion of local distinctiveness in some areas, through a process of standardisation and simplification of some of the components that make up landscape character; • a loss of some natural and semi-natural features and habitats such as ancient woodlands and unimproved grassland; • a decline in some traditional agricultural landscape features such as farm ponds and hedgerows, and a loss of archaeological sites and traditional buildings; • increased urbanisation, often accompanied by poor design standards and a decline in the variety of building materials, and the importation of urban and suburban building styles into rural areas; and • a loss of remoteness and reduced tranquillity because of built development and traffic growth. <p>Natural England report that in 2008 existing landscape character was being maintained in 51% of England's landscapes, whilst in a further 10% existing character was being enhanced. However, 20% of landscapes were showing signs of neglect. ¹</p> <p>Data from 1990 to 2003 indicates that in England the number of Character Areas with patterns of change that either maintain or enhance character has increased from 36% to 61%. The number of Character Areas with evidence of neglect or erosion of character has decreased. This evidence suggests that the character of the majority of English landscapes, at Character Area scale, is being sustained. ¹</p> <p>Trends in Scotland, Wales and/or Northern Ireland:</p> <p>The Scottish landscape is vulnerable to a variety of pressures. Key threats and opportunities to landscape character include the development of new infrastructure, agriculture, the loss and expansion of woodland and natural processes. ³ The distinctive character of the Welsh landscape has been, and remains, under threat and is declining. Future changes to the farming subsidy regime have the potential to result in significant changes to the landscape. ⁴ Similarly, the main pressures on landscape character in Northern Ireland are development, infrastructure, extraction industries, agriculture, forestry and tourism. ⁵</p> <p>National Targets:</p> <p>Forestry Commission England seeks to maintain the area of certified woodland and to ensure that 95% of woodland SSSIs are in favourable condition by 2011. ⁶</p> <p>Targets in Scotland, Wales and/or Northern Ireland:</p> <p>Forestry Commission Scotland aimed to see Scotland's woodlands increase from 17.1% of land area to about 25% and bring 80% of the special features on Scotland's nationally important nature sites into favourable condition by March 2008. ⁴</p> <p>The Northern Ireland Forest Service seeks to increase new woodland cover by 550ha by 2010.</p>	<p>References:</p> <ol style="list-style-type: none"> 1. Natural England, State of the Natural Environment 2008, Landscape Characterisation and Change, http://www.naturalengland.org.uk/publications/sones/sections.aspx 2. Forestry Commission Scotland, Scottish Forestry Strategy 3. Scottish Natural Heritage, 2002, Natural Heritage Zones: A National Assessment of Scotland's Landscapes, http://www.snh.gov.uk/docs/B464892.pdf 4. ERM, 2009, Sustainability Appraisal of the Wales Waste Strategy: Sustainability Appraisal Report, http://wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/zerowastebackground/appraisals/?lang=en 5. Environment and Heritage Service, 2008, Our Environment, Our Heritage, Our Future: State of the Environment Report for Northern Ireland, http://www.ni-environment.gov.uk/index/about-niea/state_of_the_environment/state_of_the_environment_report.htm 6. Forestry Commission England, 2008, Delivery Plan 2008-2012: England's Trees, Woods and Forests 7. Northern Ireland Forest Service, 2010, Annual report 2009-2010, http://www.forestserviceni.gov.uk/index/about-us.htm

