Monitoring and evaluating the National Adaptation Programme

Healthy & Resilient Communities theme:

- Public understanding of climate change risks
- Heat-related health impacts
- Cold-related health impacts
- Pathogens, air pollution and UV radiation
- Capability of the health and social care system
- Capability of the emergency planning system
- Capacity of people and communities to recover from flooding

Last updated: 25 June 2015

Introduction

- This slidepack:
  - Serves as a technical annex to **Chapter 4: Healthy & Resilient Communities** in the ASC's first statutory report to Parliament on the National Adaptation Programme, available at www.theccc.org.uk/publications
  - Provides the latest trend information on indicators of exposure, vulnerability, action and realised impacts that informed the ASC's assessment. A full list of indicators used by the ASC across all six NAP themes is available at www.theccc.org.uk/publications
  - Will be updated periodically as new data becomes available.
  - Highlights indicators that would be useful but where the necessary datasets have not yet been identified.
  - Follows the structure of the health chapter in the ASC's progress report, which is based on the 'adaptation priorities' the ASC identified for the natural environment.
- After presenting a high level summary of the ASC's assessment of progress against each of the adaptation priorities, this annex sets out the underlying data by adaptation priority.

Healthy & Resilient Communities theme: overview of progress

Committee on Climate Change Adaptation

Adaptation priority	Is there a plan?	Are actions taking place?	Is progress being made?
1. Public understanding of climate change risks			
2. Heat-related health impacts			
3. Cold-related health impacts			
4. Pathogens, air pollution and UV radiation			
5. Capability of the health and social care system			
6. Capability of the emergency planning system			
7. Capacity of people and communities to recover from flooding			

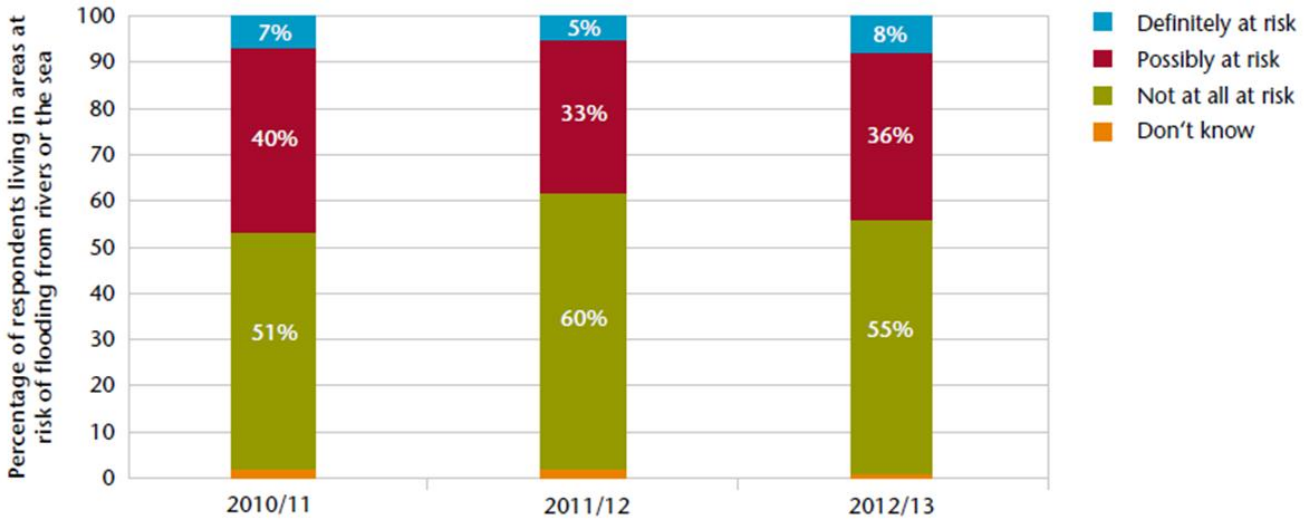
Red: plans and policies, delivery of actions, or progress in addressing vulnerabilities, are lacking.
Amber: adaptation priority has been partially addressed, some evidence of progress in some areas.
Green: plans are in place, actions are being delivered, progress is being made.
Grey: insufficient evidence to form a judgement.

1. Public understanding of climate change risks

Measure	Data series	Source	Trend	Implication
Public awareness of flood risk	2010 - 2013	EA	↔	Awareness remaining at low levels overall.
Awareness of health risks from heat	2013	Defra	?	No trend data available as Defra's PREPARE survey is not due to be repeated.

1. Public understanding of climate change risks

Awareness of flood risk to homes	↔	Public unlikely to be taking steps to prevent damage to homes and possessions.



Source: Harris Interactive (2013) for the Environment Agency
Notes: Figure shown on page 35 of ASC (2014) Managing climate risks to well-being and the economy. http://www.theccc.org.uk/publication/managing-climate-risks-to-well-being-and-the-economy-asc-progress-report-2014/

- Only 5 – 8% of people living in areas at flood risk are aware that they are definitely at risk.

1. Public understanding of climate change risks

Awareness of health risks from heat	**?**	Available evidence suggests that awareness is low, but we do not have data to produce a trend as yet.

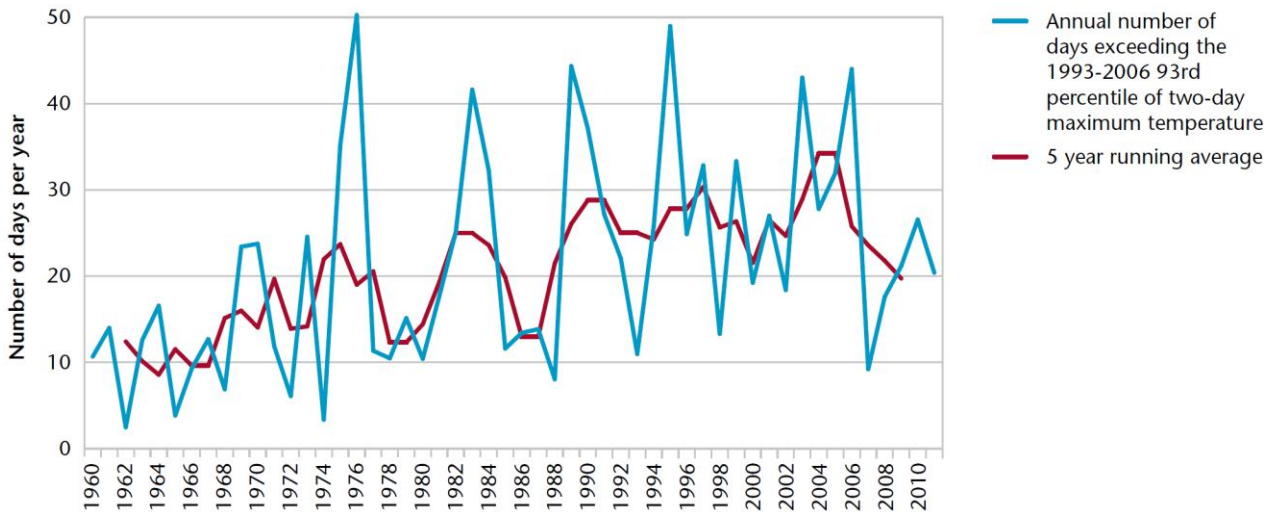
Do not have an exhibit.

2. Heat-related health impacts

Measure	Data series	Source	Trend	Implication
Number of hot days per year	1960 - 2011	Met Office	↑	Number of hot days per year is increasing
Area of urban greenspace	2001 - 2013	OSMM	↓	Area of urban greenspace is declining, though trend has slowed in recent years
Number of flats being built as % of new housing stock	1996 - 2015	NHBC	↑	% of new housing stock made up of flats has increased from 15% of new dwellings in 1996 to 40% in 2015. Flats are particularly prone to overheating.
Number of heat-related deaths per year	?	Public Health England	?	No trend data currently available – PHE is liaising with the ASC to share annual mortality data.

2. Heat-related health impacts

Number of hot days per year	↑	A continuation of this trend is likely to increase the exposure of vulnerable people to heat.

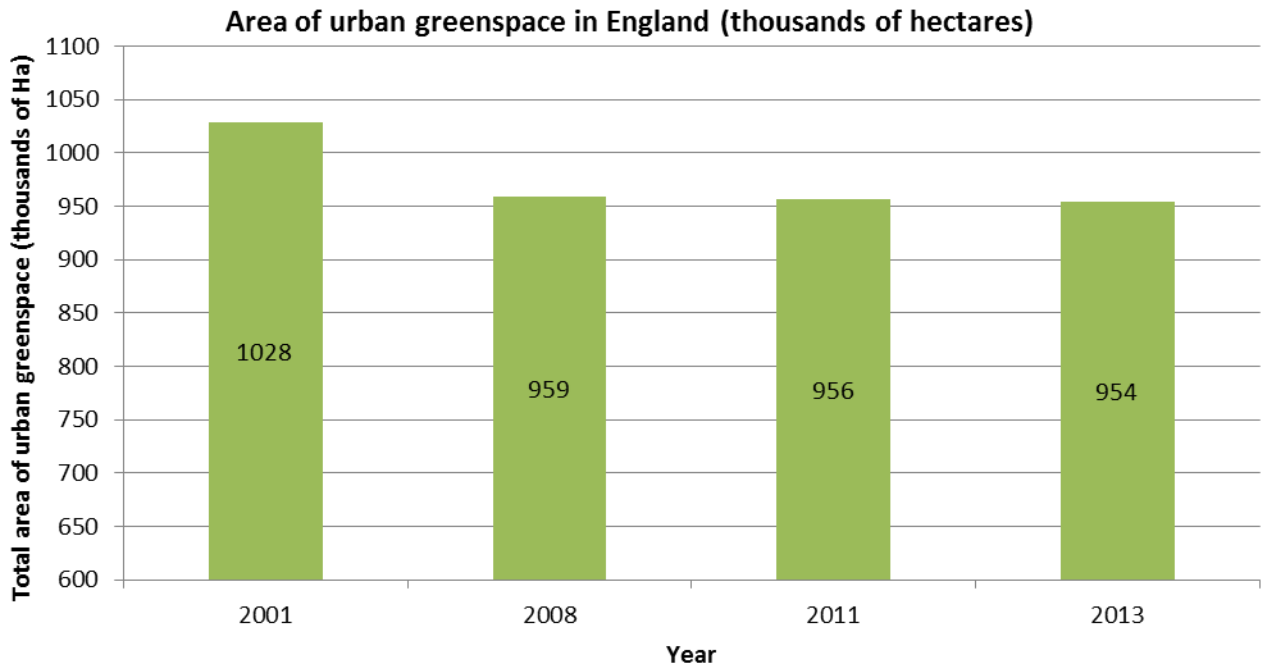


Source: HR Wallingford (2014) for the Adaptation Sub-Committee
Notes: The graph shows the number of days per year that the population-weighted daily maximum temperature exceeds the 93rd percentile of the two-day average daily maximum temperature (the day in question plus the next day) for the period 1993-2006 (blue line). The 5 year running average is also shown, which is the average of the 2 years previous, the current year and the 2 years after (red line).

- The number of hot days per year in England has increased from approx. 10 per year in the 1960s to 25 per year in the 2000s.

2. Heat-related health impacts

Area of urban greenspace	↓	Reductions in urban greenspace will enhance the urban heat island effect and reduce the ability of the ground to soak up surface water, leading to a greater risk of flooding.

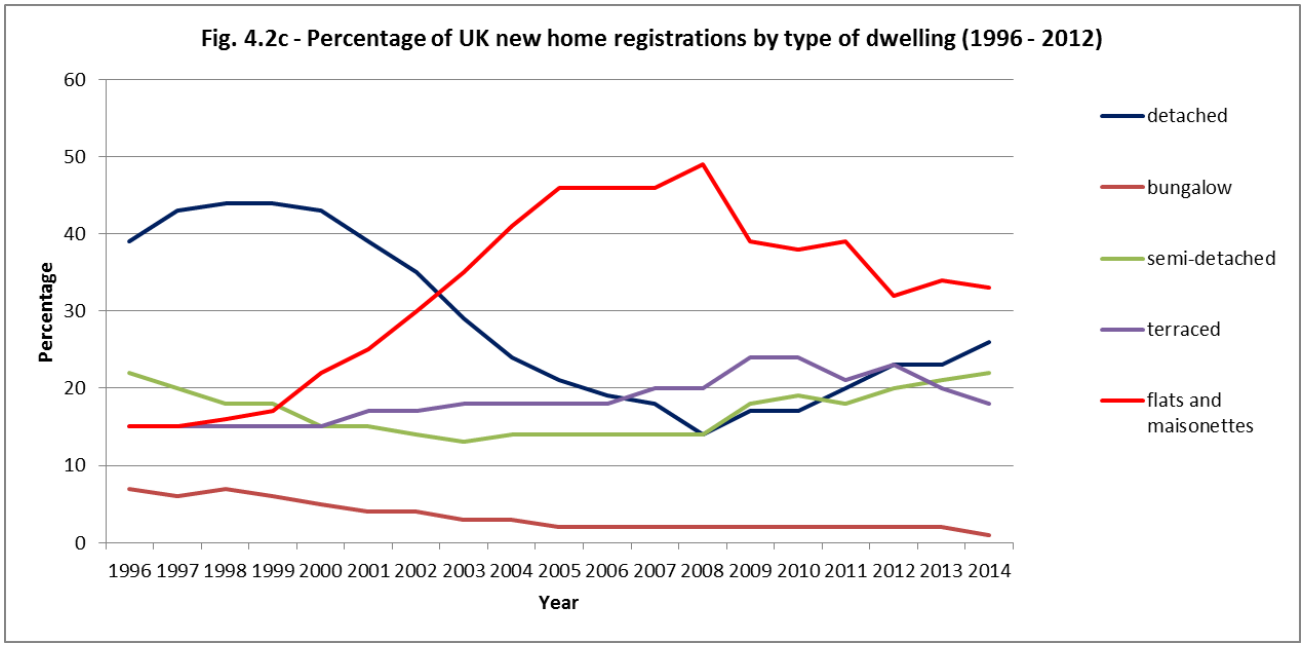


Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf

- The area of urban greenspace has declined by 74,000 Ha between 2001 and 2013; recent declines have slowed since 2008, but the decline has not yet reversed. The area of urban blue space has stayed roughly constant.

2. Heat-related health impacts

Number of flats being built as % of new housing stock	↑	Flats are particularly prone to overheating compared to other types of dwelling, so the overall level of exposure to heat is likely to be increasing.



Source: NHBC (2015) New homes statistics review.
http://www.nhbc.co.uk/cms/publish/consumer/NewsandComment/Stats/Q1_2015.pdf
Notes:

- The number of flats and maisonettes being built has increased from around 15% of all new registrations in 1996 to around 35% in 2014 (red line), with a mirrored decline in the number of detached homes being built. (blue line)

2. Heat-related health impacts

Number of heat-related deaths per year	?	We do not yet have sufficient data to determine a trend in premature deaths during heatwaves.

Do not have an exhibit.

Source:
Notes:

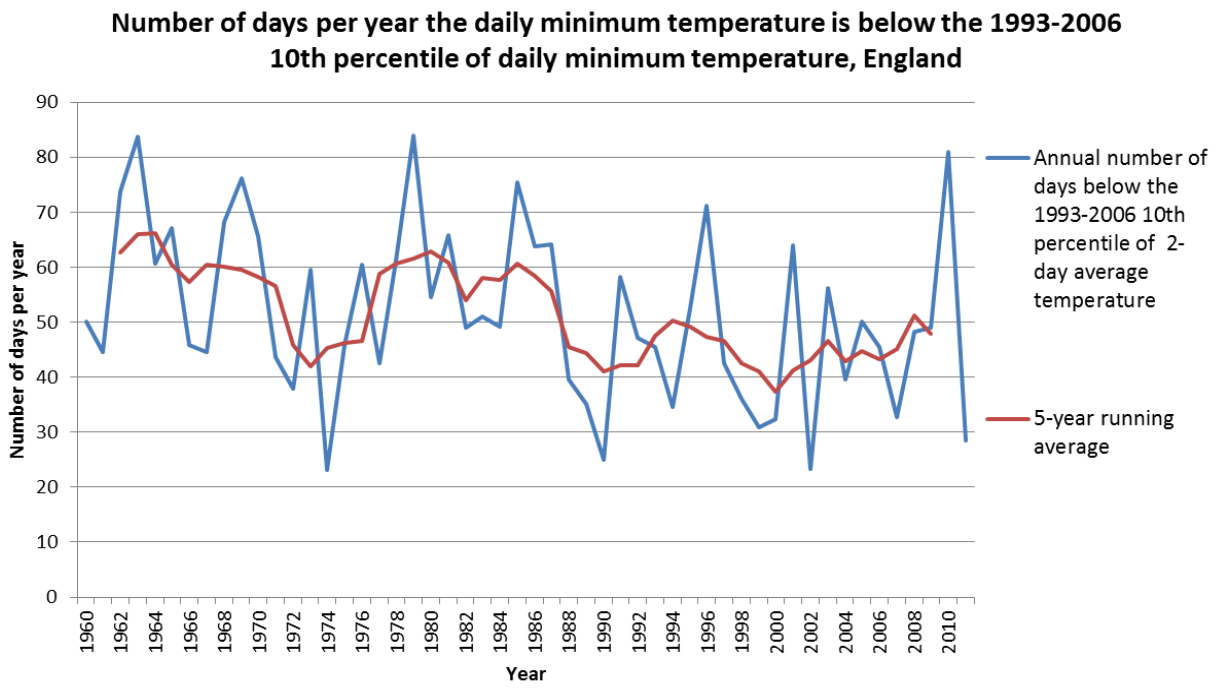
- We do yet have enough data to determine a trend in excess summer mortality, but are working with Public Health England to obtain data to populate this indicator.

3. Cold-related health impacts

Measure	Data series	Source	Trend	Implication
Number of cold days per year	1960 - 2011	Met Office	↓	Number of cold days per year is declining.
Number of people living in fuel poverty	2003 - 2012	DECC fuel poverty statistics	↓	Number of people living in fuel poverty is declining.
Average SAP rating of households in England	1996 - 2011	English Housing Survey	↑	The average SAP rating of English homes has increased from <45 in 1996 to 60 in 2013.
Number of cold-related deaths per year	?	?	?	Excess winter mortality is still higher relative to all other NW European countries, but not all of these winter deaths are due to cold. We do not currently have data to plot a trend in cold-related deaths.

3. Cold-related health impacts

Number of cold days per year	↓	The reduction in cold days is likely to lead to a reduction in the exposure of vulnerable people to cold.



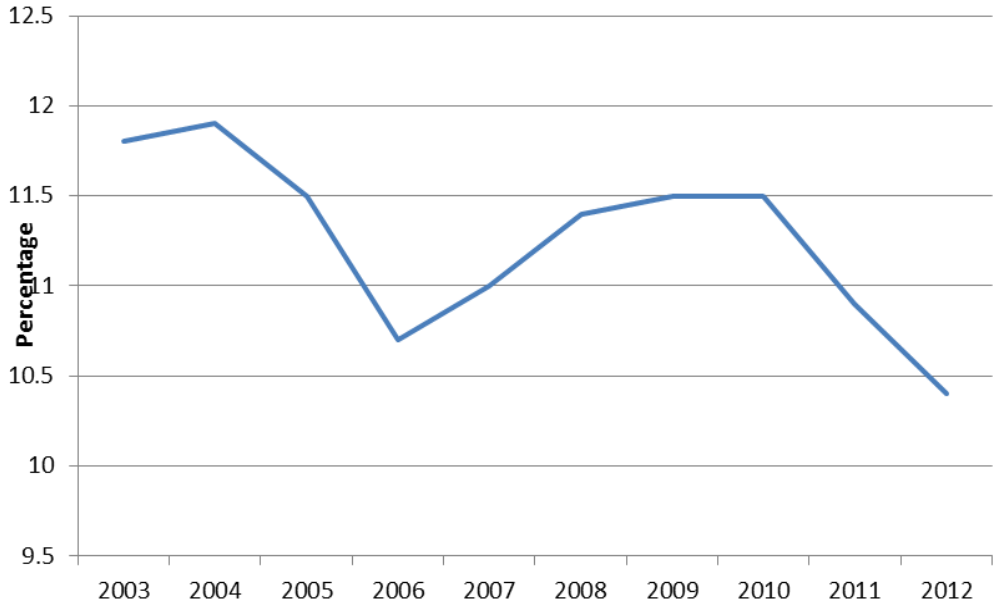
Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf
Notes: Trends in the number of days per year the daily minimum temperature is below the 1993-2006 10th percentile of the two-day average minimum temperature for England

- The number of cold days per year has declined from around 60 in the1960s to 45 in the 2000s.

3. Cold-related health impacts

Number of people living in fuel poverty	↓	The number of people living in fuel poverty is declining slightly over time; this is likely to reduce the vulnerability of people to cold.

Percentage of English households in fuel poverty, 2003 - 2012

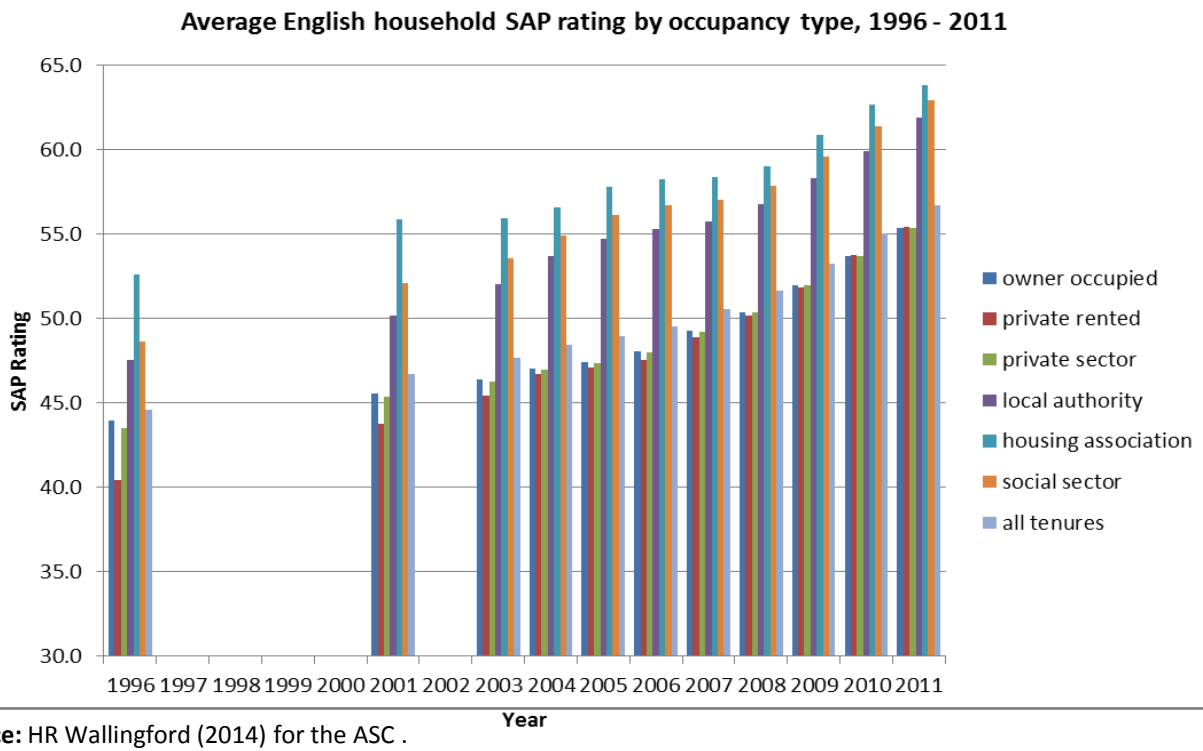


Source: DECC (2014) Fuel poverty trends, 2003 – 2012.
Notes: This data uses DECC's new 'low income, high costs' definition of fuel poverty

Although the total percentage of households living in fuel poverty in England is declining, there is a pronounced north-south divide that warrants further monitoring on top of the national trend (see HR Wallingford (2014) for the ASC (http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf)

3. Cold-related health impacts

Average SAP rating of households in England	↑	A higher SAP rating equates to a more energy efficient home, which will reduce the exposure of people to cold temperatures indoors.



Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf
Notes:

- The average SAP rating of English homes has increased from <45 in 1996 to 60 in 2013.
- The Standard Assessment Procedure (SAP) is the methodology used by the Department of Energy and Climate Change (DECC) to assess and compare the energy and environmental performance of residential dwellings.
- A higher SAP score indicates a more energy efficient home. High SAP scores indicate better air-tightness which in turn is likely to be beneficial for maintaining heat inside in winter. However, it may also mean the building is more difficult to cool in summer if proper ventilation is not installed.
- The proportion of homes reporting a damp or mould problem has also dropped from 10% in 2003 to 5% in 2011.

3. Cold-related health impacts

Number of cold-related deaths	?	Excess winter mortality is still higher relative to all other NW European countries, but not all of these winter deaths are due to cold. We do not currently have data to plot a trend in cold-related deaths.

Do not have an exhibit

Source:
Notes:

- The decline in overall winter mortality since 1960 has slowed in recent years. This may mean that there has also been a decline in cold-related mortality, but there is uncertainty.
- UK excess winter mortality is still higher relative to all other northwestern European countries once differences in winter temperatures are taken into account.
- The benefits of milder winters on mortality will be counteracted by an ageing population. Current best estimates suggest that mortality will only decline by around 1,000 per year by 2050 compared to a baseline of 41,000 per year today.

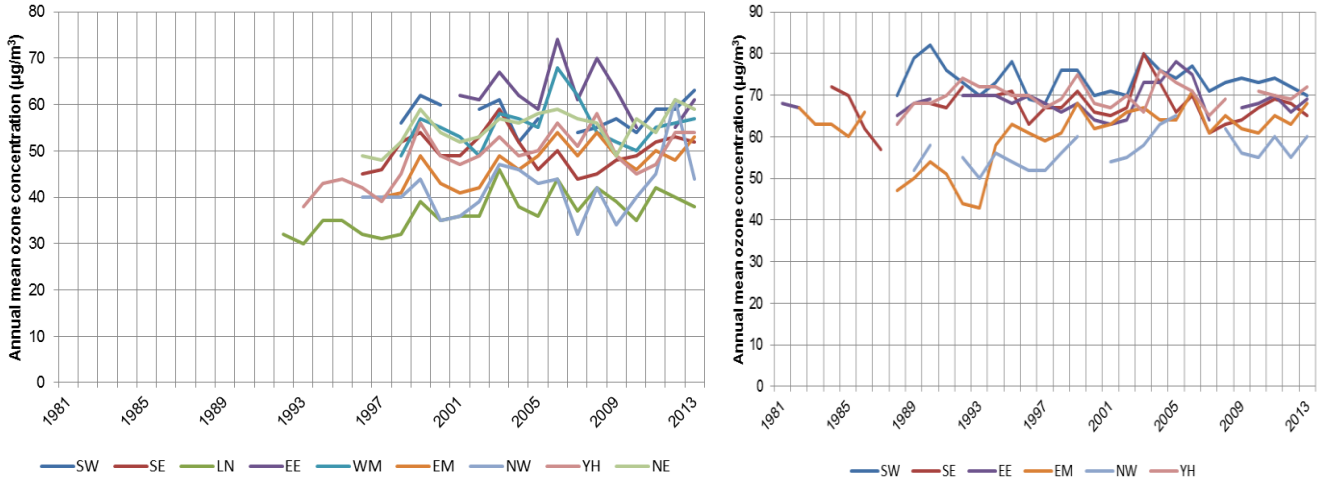
4. Pathogens, air pollution and UV radiation

Measure	Data series	Source	Trend	Implication
Background concentrations of ground level ozone	1988 - 2013	Defra air quality data archive	↑	Background levels of ground level ozone have increased slightly over time, but not enough to have made a significant difference to overall exposure at present.
Number of people with chronic respiratory conditions	?	?	?	It is estimated that there are between 6 and 9 million people with chronic respiratory conditions in the UK, but we do not have enough data to plot a trend.
Background UV radiation levels	1991-2012	Public Health England	↑	Background levels of UV radiation have increased slightly over time, but not enough to have made a significant difference to overall exposure at present.
Amount of time spent outdoors	?	?	?	We do not yet have a good indicator to determine how the amount of time spent outside is changing.

4. Pathogens, air pollution and UV radiation

Ground level ozone – background concentrations	↑	Background levels of ground level ozone have increased slightly over time, but not enough to have made a significant difference to overall exposure at present.

Ground level ozone concentrations for urban and rural locations around England, 1988 - 2013



Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf
Notes: Left hand panel shows ozone concentrations for urban sites, right hand panel for rural sites.

- Background ground level ozone is increasing slowly over time. Rural background concentrations are higher than urban concentrations.

4. Pathogens, air pollution and UV radiation

Number of people with chronic respiratory conditions	?	It is estimated that there are between 6 and 9 million people with chronic respiratory conditions in the UK, but we do not have annual data to plot a trend.

Do not have an exhibit

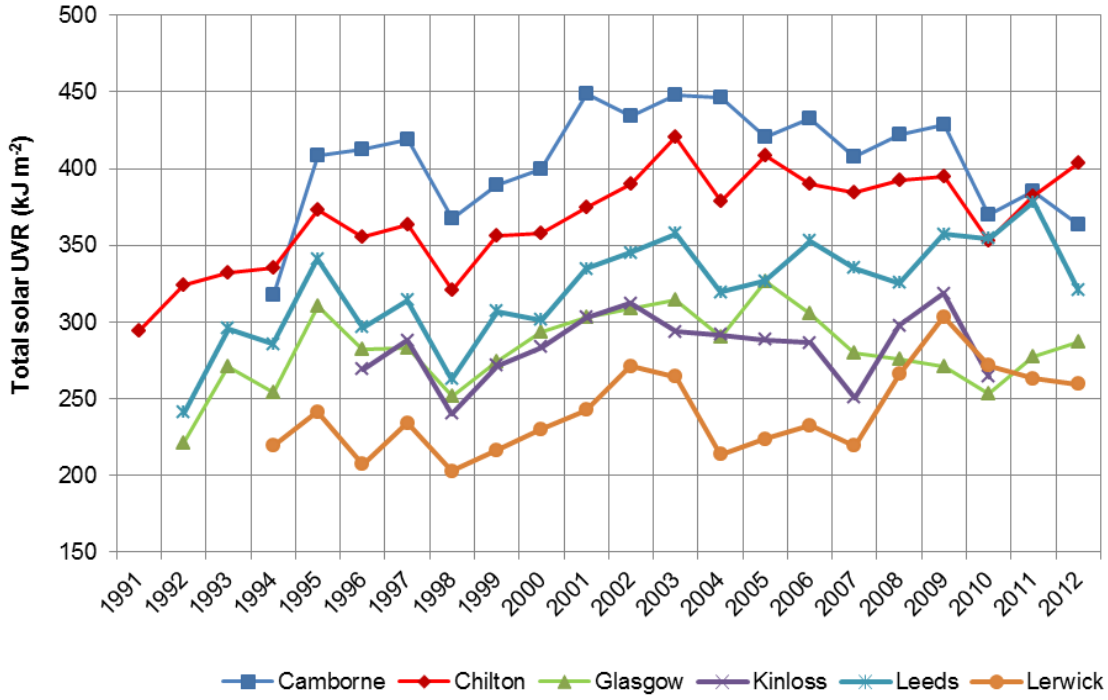
Source:
Notes:

Notes

4. Pathogens, air pollution and UV radiation

Background UV radiation levels.	↑	Background levels of UV radiation have increased slightly over time, but not enough to have made a significant difference to overall exposure at present.

Total solar UVR (erythemal dose) per year for selected sites around the UK



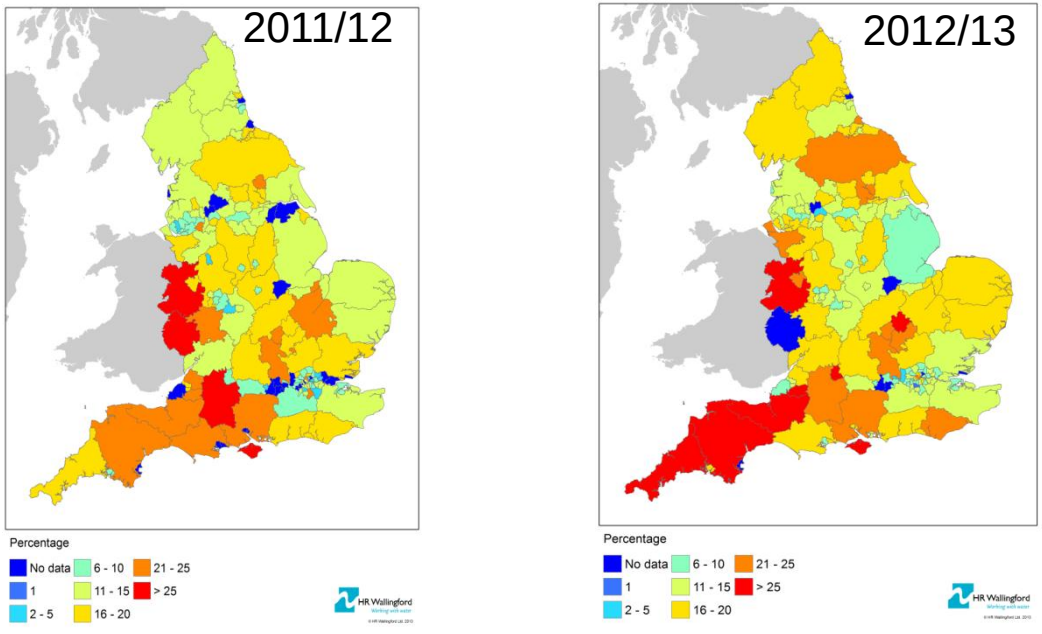
Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf
Notes:

- Background levels of UV radiation levels are increasing slowly over time.
- The highest UV levels are in SW England, which is also where people spend the largest proportion of time outdoors for leisure activities.

4. Pathogens, air pollution and UV radiation

Percentage of time spent outdoors (exposure to UV radiation)	?	We do not yet have a good indicator to determine how the amount of time spent outside is changing. Spending more time outdoors has many health benefits but can also increase exposure to UV radiation and outdoor air pollution.

Percentage of people who have visited the natural environment for health or exercise reasons in the past seven days (2011/12 to 2012/13)



Source: HR Wallingford (2014) for the ASC .
http://www.theccc.org.uk/wp-content/uploads/2014/07/4-2014-03-31-health-and-emergency-planning-indicators-final.pdf
Notes:

- It is estimated that the average person spends 90% of their time indoors, but the amount of time spent outside is an indicator of overall exposure to UV radiation.
- Some studies suggest that people will spend more time outdoors as the climate warms, thus increasing exposure to UVR further.
- The Public Health Outcomes Framework has an indicator of the number of people who have visited the natural environment for leisure in the last seven days, which in the absence of any other data can serve a proxy indicator of relative time spent outdoors across the country.

5. Capability of the health and social care system

Measure	Data series	Source	Trend	Implication
Number of service providers with site-level resilience measures in place for flood, cold and heat.	?	?	?	Data on the uptake of site-level measures to cope with flooding, cold snaps and heatwaves is not currently collected.

5. Capability of the health and social care system

Number of service providers with site-level resilience measures in place for flood, cold and heat.	?	**Data on the uptake of site-level measures to cope with flooding, cold snaps and heatwaves is not currently collected.**

Do not have an exhibit.

Source:
Notes:

- Although NHS service providers have to adhere to a set of core standards on emergency resilience, there is no national register of resilience measures for individual health and social care assets.
- Local authorities have no requirement to report on resilience levels for public health and social care assets.

6. Capability of the emergency planning system

Measure	Data series	Source	Trend	Implication
Number of Local Resilience Forums with adequate personnel and equipment in place for an extreme flood, heatwave, cold snap, drought.	?	?	?	There is no centrally collected data that tells us what the level of capability should be, and what it actually is at present.

6. Capability of the emergency planning system

Number of Local Resilience Forums with adequate personnel and equipment in place for an extreme flood, heatwave, cold snap, drought.	?	There is no centrally collected data that tells us what the level of capability should be, and what it actually is at present.

Do not have an exhibit

Source:
Notes:

- It is important to determine what the required level of capability for responding to extreme weather should be, and following from that what it actually is.
- Neither of these questions is currently answerable as required capability levels and actual numbers of personnel and equipment for various types of extreme weather event are largely unknown.
- Some data is collected through the Government's capabilities survey on whether plans are in place and if responders feel they have sufficient equipment and resources, but none of this information is quantified and the survey is voluntary.

7. Capacity of people and communities to recover from flooding

Measure	Data series	Source	Trend	Implication
Time it takes for people to return to their homes after a flood	?	?	?	We do not currently have a trend for this metric though there is case study data available, e.g. for the 2007 floods in Hull, and DCLG collect some data.

7. Capacity of people and communities to recover from flooding

Time it takes for people to return to their homes after a flood	?	We do not currently have a trend for this metric though there is case study data available, e.g. for the 2007 floods in Hull, and DCLG collect some data.

Do not have an exhibit

Source:
Notes:

- Time taken for people to return to their homes, or time spent in temporary accommodation is a measurable proxy indicator of overall recovery time from flooding.
- At present, there is no consistent data collection for this metric, though some case-specific data exists.

Adaptation Sub-Committee

http://www.theccc.org.uk

@theCCCuk