

putting people first

be aware, be prepared, take action

how to integrate climate change adaptation
strategies into local government

adapting to climate change: what are you doing?

Are you aware of your council taking positive action to tackle climate change? Is it one of the top five priorities for your council? This short guide has been produced by the Local Government Association (LGA), Environment Agency (EA) and United Kingdom Climate Impacts Programme (UKCIP) to encourage local authorities to assess the risks posed by climate change and ensure that adaptation strategies are planned into local government working.

mitigation & adaptation – the dual challenge of climate change

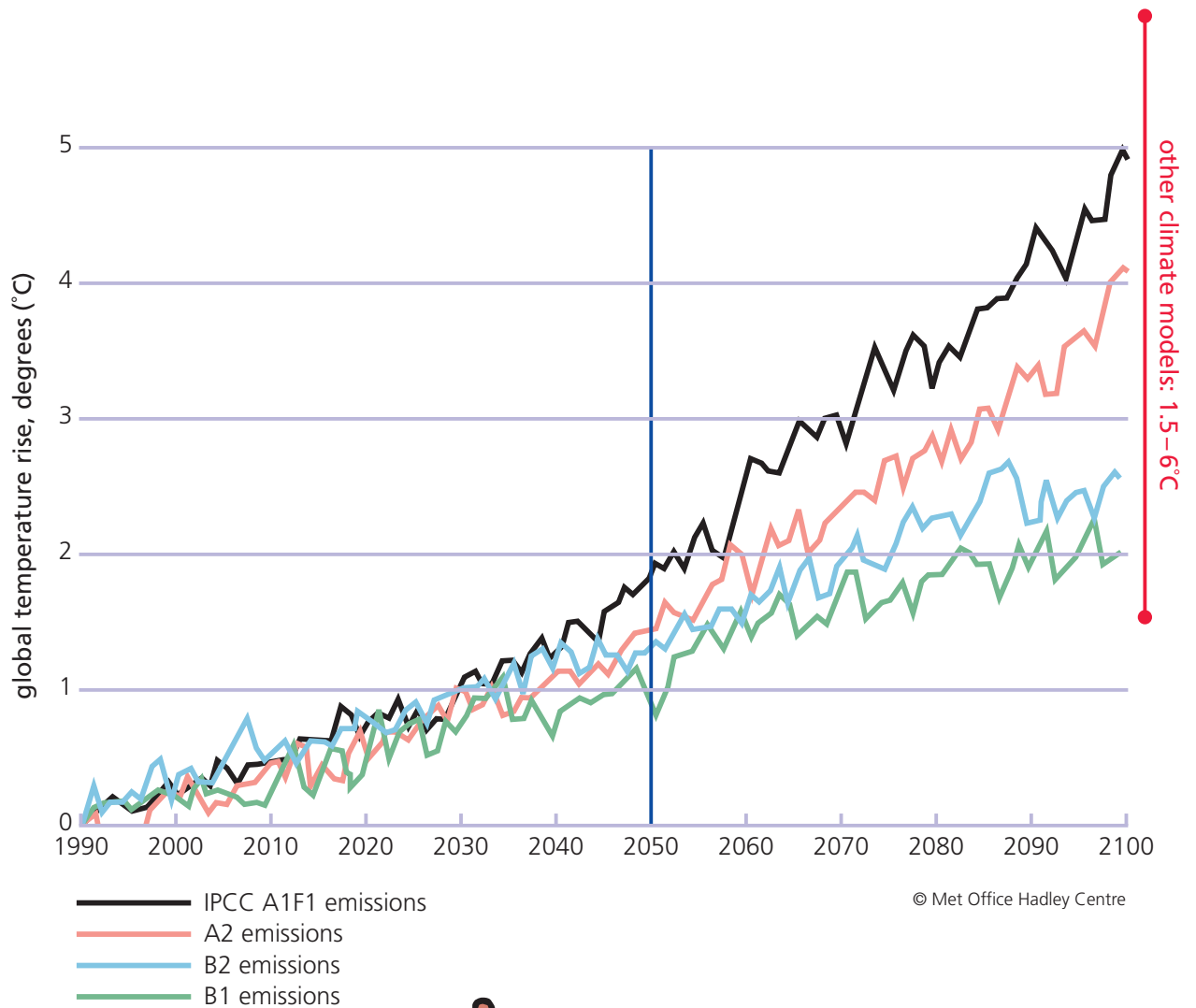
Avoiding dangerous climate change will require a 60–80 per cent cut in greenhouse gas emissions by 2050 (climate change mitigation). The urgency and scale of this task rightly dominates much of the climate change debate. However, even if we miraculously cut all emissions today and became a zero carbon society, we would still witness a changing climate due to our historical emissions. Whatever we do to reduce emissions, we are committed to at least 30–40 years of climate change (see graph right). Ensuring that people, communities, infrastructure, and wildlife are resilient to the unavoidable impacts of these changes is called ‘climate change adaptation’.

climate change impacts

Every region and local authority will be affected by climate change. The 2007 summer floods, the 2004–06 drought and the 2003 heatwave, have shown how climatic events can have a major impact on households (including people’s health), businesses, critical infrastructure (such as roads, railways, water treatment works or electricity generation) and vulnerable sections of society (such as the poor or elderly), as well as having a major economic impact.

The climate in the UK is projected to change significantly over the next century, with average annual temperatures rising by up to 5°C by 2080. The specific changes that we are likely to see can be summarised as:

- wetter, warmer winters, leading to increased flood risk;
- hotter, drier summers, leading to water scarcity, drought and placing greater strain on wildlife;
- rising sea levels, leading to more coastal erosion and a greater risk of coastal flooding; and
- more frequent extreme events, such as heatwaves, gales, storms, tidal surges and intense rainfall.



small change, big difference

the role of local authorities

Climate change is happening and the time is right for local government to examine critically its response. Local authorities have enormous potential to address climate change impacts, through their functions as transport and planning authorities, through other service delivery such as building control, community care providers, waste, housing, environmental health and trading standards, and as providers of green space. In addition, through their convening role in local strategic partnerships (LSPs), local area agreements (LAAs) and multi-area agreements (MAAs), local authorities can work in partnership with key delivery partners, such as the Environment Agency (EA).

Climate change is increasingly being addressed through conventional risk assessment methodologies, familiar to local authority working practices. These can be summarised as:

- **political risk:** meeting government targets across a number of policy areas could be affected by climate change. Are your plans and strategies fit-for-purpose under a changing climate?
- **business risk:** climate change will affect all levels of service delivery, such as waste disposal and collection, housing services, and planning. How might climate change hinder successful delivery?
- **reputation at risk:** if core policies begin to fail due to climate change, who will be accountable? At local election time, would a candidate with policies to tackle climate change be more or less likely to get voted in? (See box on local politics of climate change)

- **financial risk:** increasingly people are putting a price on extreme weather events and climate change. The summer floods of 2007 are now estimated to have cost over £3bn. What is the cost of getting it wrong?
- **community risk:** all communities are at risk, but we know that poorer communities will suffer disproportionately. How vulnerable are your communities and where?

Local authorities should aim to undertake a comprehensive risk assessment of all their activities and develop an Adaptation Action Plan to demonstrate how they intend to meet those risks.

The LGA's **small change, big difference** campaign on climate change responds to the LGA's **climate change commission** which found that there is much more that councils could do to tackle climate change.

The campaign encourages councils to take responsibility for reducing carbon emissions and to prepare for the consequences of more extreme weather in their areas; and persuade decision-makers and householders to see councils as central to tackling climate change.

One of our key objectives is that by 2011, all local authorities will have an understanding of how climate risks affect core service delivery, infrastructure, assets and the wider local community.

The local politics of climate change

Over three quarters (76 per cent), of people agree that councils have a key role to play in tackling climate change.

70 per cent of people believe that climate change should be one of the top five priorities for their council.

65 per cent of people believe that more can be done by their council with the existing resources to tackle climate change.

56 per cent of people believe that councils should force their residents to take action on climate change.

64 per cent of people believe that councils should introduce financial incentives and 53 per cent believe they should introduce penalties to encourage people to reduce greenhouse gases.

62 per cent of people state they would be more likely to vote for a candidate committed to tackling climate change in a local election.

Source: LGA Climate Change Public Opinion Polling, March 2008.

government drivers for adaptation

- As well as setting legally binding greenhouse gas emissions targets, the **climate change bill (Act)** requires the government to assess the risks to the UK from climate change and prepare a programme of adaptation measures. The

government is also proposing new powers which will enable it to direct public bodies which are failing to address climate risk to do so and to produce an action plan.

- The **new local performance frameworks**¹ includes a national performance indicator (PIs) on **adapting to climate change** (NI 188). This indicator sets out a four-stage process for climate change adaptation, including the making of a public commitment, undertaking a climate change risk assessment of service delivery, infrastructure and local communities, and developing an action plan to address those risks. **LAAs** will play a key role in delivering adaptation at a local level.
- Local authorities' performance on climate change will also be assessed within the **comprehensive area assessment (CAA)**, the successor to CPA undertaken jointly by the Audit Commission with other inspectorates. Local authorities will be assessed against all national performance indicators, regardless of what they have chosen in their LAA. This will include climate change adaptation.
- The **planning bill (Act)** places a new duty on local authorities to incorporate climate change mitigation and adaptation into **local development frameworks (LDFs)**. In effect this highlights the importance of implementing the **planning policy statement on planning and climate change**. Local authorities will need to ensure that development plans are adapted to climate change, including taking account of future flood risk, as highlighted in **PPS25 (development and flood risk)**. Developer contributions raised

either through the **community infrastructure levy** or traditional **section 106 agreements** could help local authorities finance the infrastructure needed to help adapt to climate change, such as flood defences.

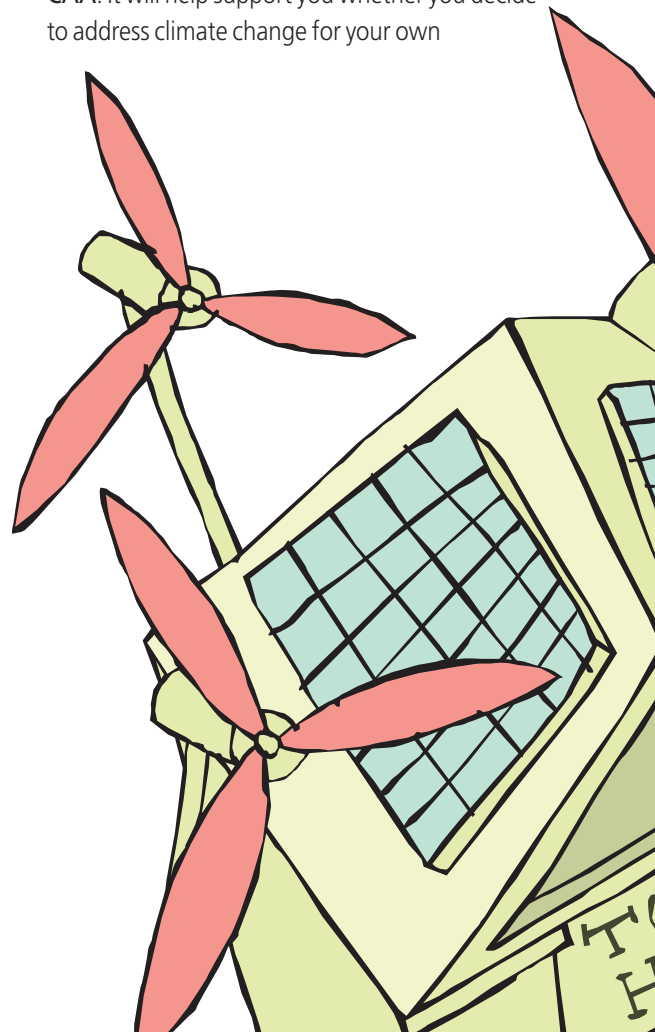
- Looking further ahead, local authorities should be aware of future initiatives from the European Union. A **European white paper on adaptation to climate change** is expected in November 2008.

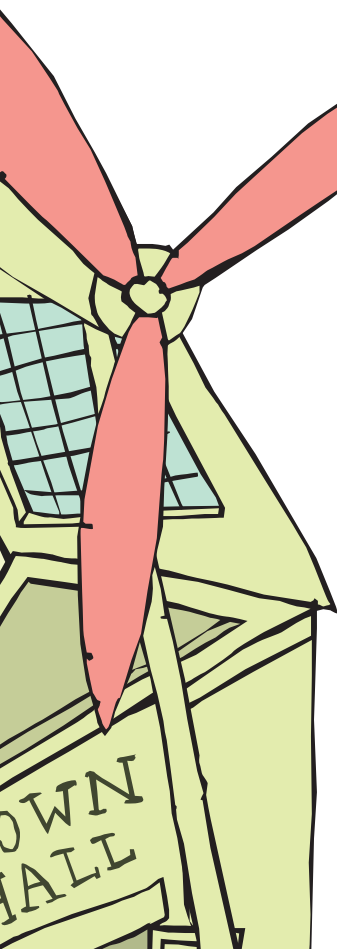
positive action to mainstream adaptation

- 1 Sign the Nottingham Declaration.** Launched in October 2000, the Nottingham Declaration has now been signed by the majority of English councils. All Scottish and Welsh councils have signed their own version. Councils that sign the declaration make a commitment to, “develop plans with their partners and local communities to progressively address the causes and the impacts of climate change”. You can also appoint a **high-level champion**, such as a local councillor, who can enthuse, influence and have impact within your authority and community.
- 2 Choose the adapting to climate change indicator (NI 188)** in your LAA or familiarise yourself with its stages to prepare for the CAAs. Targets within the LAA must be agreed locally, but all councils and **local strategic partnerships (LSPs)** are encouraged to set themselves ambitious targets for adapting to climate change.
- 3 Ensure that your LSP is also committed to tackling climate change.** The LSP can provide a

focus for councils to work on adaptation with other public services, especially those which have a legal duty to co-operate with the LAA². These agencies can be encouraged to sign up to climate change targets including NI 188 to maximise local achievements. The LSP provides a framework for joint work on climate change including joint training, information and awareness-raising campaigns, and for dialogue between councils, other public services, the voluntary sector and local businesses.

- 4 Use the guidance for local authorities on how to undertake climate risk assessments and action plan processes in the Nottingham Declaration Action Pack.** The pack provides detailed guidance required to develop an action plan – valid for the **Nottingham Declaration, LAA and CAA**. It will help support you whether you decide to address climate change for your own





case study 1 the Oxfordshire Local Climate Impacts Profile (LCLIP)

A recent LCLIP for Oxfordshire County Council found that 36 severe weather events, caused 260 incidents over 10 years which added a minimum of £16m in additional unplanned expense to the county council.

For example, within Oxfordshire, temperatures reached 34.8°C during July 2006 (cf 1961–90 mean max of 21.7°C) and 44.2mm of rain fell in two hours on 22 July (cf 1961–90 mean of 46mm). Initial estimates for the cost of this extreme weather event are around £3.6m, (expected to rise when full costs are calculated).

Some of the impacts and consequences of this event are:

high internal temperatures

Six schools closed for half, one or two days. (100 children affected).

heat stress

Road surfaces melting. Gritters sent out to treat 37 heat-damaged roads.

flash floods

Roads flooded causing city centre congestions.

crime

An increase in theft through open windows.

power failure

Lightning strikes brought down eight SE cables. Power cuts affected 3,500 homes.

increased fires

Crop/barn fires – 19th July was a busy day for fire crews.

estate/corporate functions, the services you provide or for your community as a whole.

- 5 As part of the action planning process, it will be necessary to determine what climate changes your area is likely to see this century. The **UK Climate Impacts Programme (UKCIP)** helps organisations to assess how they might be affected by climate change, so that they can prepare for its impacts. A **local climate impacts profile (LCLIP)** is one of a range of tools

developed by UKCIP which can help local authorities to better understand the impacts and consequences of current extreme weather events. This tool is particularly useful for clarifying the issues that may need to be considered in developing a response for each council department or service. Additional region-specific guidance on the adaptation response is also available from your **Regional Climate Change Partnership**. (see page 14).

five stages to preparing an adaptation action plan

The Nottingham Declaration action pack guides you through the five stages you will have to take to prepare an adaptation action plan, namely...

- 1 Getting started – building political support for action and identifying who in your local authority and beyond should be involved in formulating and delivering your action plan.
- 2 Assessing the current and likely future situation – what information do you have available and do you need to collect more information to address adaptation? What policy support is available for action?
- 3 Developing a strategic approach – drawing on the information available and the views of stakeholders, what are the priority areas for action on adaptation?
- 4 Preparing an action plan – pulling together your assessment of the current situation and the strategic objectives together and developing a coherent plan of action, with a timetable for completion and an allocation of who is responsible for the delivery of each element of the plan.
- 5 Implementing the action plan – launching your action plan, taking forward and co-ordinating actions and communicating the aims of the plan to councillors, council staff, LSP and the wider community. Over time, assessing whether the actions set out in the plan have been achieved and what barriers there were to progress.
- 6 Put in place plans to enhance the quantity and the quality of green space/green infrastructure through measures including master planning, street-level management and parks management. Green infrastructure will have an important role to play in helping people adapt to the impacts of unavoidable climate change. The services and benefits green infrastructure provides (eg cooling and shading, absorbing air pollutants, sequestering carbon, reducing flood risk, enhancing biodiversity) will be increasingly important within a changing climate.
- 7 Refer to the other guidance provided in **table 1** which provides you with **10 policy responses** to key issues that relate to flooding (inland, urban, and coastal), health (people and livestock) biodiversity, waste, heatwaves, planning, water scarcity and drought, homes, and critical infrastructure. These are key areas which will be affected by climate change and we have provided links to some of the other external guidance and research available to help support you in the development of your adaptation action plan.

table 1: climate change adaptation issues, policy and guidance

This table is meant to provide some headline messages for the reader in terms of adaptation impacts and risk, possible policy responses and available guidance and research. It is not a statement of policy.

issue	impact/risk	local authority policy response	guidance
inland flooding (fluvial)	<p>The risk of inland flooding in the 2080s is expected to increase by between approximately four and six times over present levels as a result of increased rainfall.</p> <p>There are 1.6m people living currently at risk of flood (greater than 1:75 year occurrence). This could rise to 2.4m by 2080.</p>	<p>Rigorously apply 'Planning policy statement 25 (PPS25): development and flood risk'.</p> <p>Ensure that LDF's are aligned to catchment flood management plans (CFMP).</p> <p>Raise awareness with households.</p>	<p>PPS25 and practice guide³</p> <p>CFMP guidance⁴</p> <p>Floodline⁵</p> <p>Flood maps⁶</p>
urban drainage (overwhelming of urban drainage systems by intense rainfall)	<p>81,700 properties at risk from a 1:10 year event from urban flooding.</p> <p>Could be in the order of 300,000 properties plus by the 2080s.</p> <p>Flooding to towns and cities from surface water and urban drainage currently costs the national economy £270m.</p>	<p>Develop a surface water management plan (SWMPs).</p> <p>Sustainable urban drainage systems (SUDS)</p>	<p>Improving surface water drainage⁷</p> <p>PPS25 and practice guide³</p> <p>Designing for exceedance in urban drainage⁸</p> <p>CIRIA⁹</p> <p>Environment Agency¹⁰</p>
coastal flooding	<p>£130bn worth of property currently at risk from coastal flooding and 100,000 properties in areas that, without protection, could be eroded.</p> <p>By the 2080s, 3.4m people at risk.</p>	<p>Ensure that shoreline management plans (SMP) are aligned to local development frameworks (LDF).</p> <p>Raise awareness with households.</p>	<p>PPS25 and practice guide</p> <p>Floodline⁵</p> <p>Flood maps⁶</p> <p>Integrated coastal zone management¹¹</p> <p>Shoreline management plan guidance¹²</p>

case study 2 summer 2007 floods – the story of Walham and Mythe

The severe flooding that affected much of the country during June and July followed the wettest May to July period since records began in 1766. On 20 July, one and a half times the average July rainfall fell around Gloucester in just one day, causing widespread flooding. Many businesses, homes, and vital service sites were flooded.

Walham sub-station to the north of Gloucester, is built on raised ground in the River Severn floodplain. It provides power to half a million homes across Gloucestershire and south Wales. As it became clear that the floods could submerge Walham, a 1,000m temporary flood defence barrier was built to protect the site. After 10 hours work by the local authorities, emergency services and the Environment Agency, the site was secured. Nearby Castle Mead sub-station was less fortunate and power to 42,000 homes was cut whilst temporary defences were put in place.

Mythe water treatment works was also severely affected by the severe flooding in July. The site supplies water to around 350,000 people in Tewksbury, Cheltenham and Gloucester. Up to half a metre of flood water covered the site, flooding buildings, offices and equipment and preventing staff from safely returning for three days.

Although we cannot attribute the floods directly to climate change, we know that under future climate scenarios we will witness more extreme events like these. The summer floods must now be a wake-up call to take action. Read more case studies from the summer floods at www.environment-agency.gov.uk



issue	impact/risk	local authority policy response	guidance
water scarcity/ drought	In many parts of England there is less water per person than in most Mediterranean countries, and parts of the south east have less water per person than Syria. The 2004–06 UK drought was one of the worst in a 100 years.	Ensure that new build has high water efficiency standards, such as Code for Sustainable Homes. Promote water efficiency measures and behaviour change to households.	Code for sustainable homes ¹³ Retrofitting report – your home in a changing climate ¹⁴ Water neutrality in the Thames Gateway ¹⁵
health	Urban Heat Island effects and 2,000 excess deaths in the UK due to the hot summer of 2003.	Service providers, such as hospitals, care homes and schools, should assess climate risks and develop an action plan to address these, such as a local heatwave plan.	Health effects of climate change in the UK ¹⁶ UKCIP guidance on climate change risk assessments ¹⁷
waste disposal	About 335m tonnes of waste are produced in the UK each year. Most landfill sites are operational for 30–40 years and biologically active for a further 60–70 years.	Ensure that waste management sites are properly managed and take account of climate risks.	UKCIP guidance on climate change risk assessments ¹⁸

case study 3 BRANCH

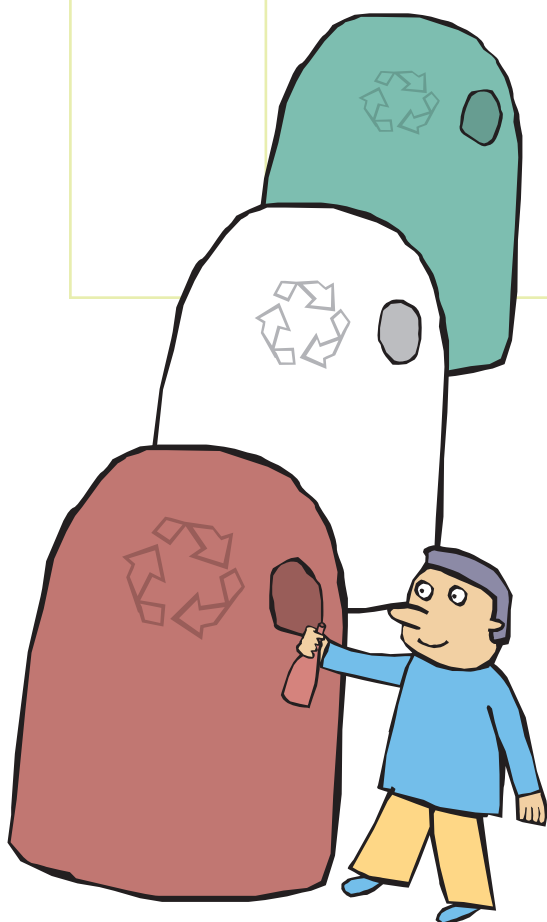
The BRANCH (biodiversity requiring action in north west Europe under a changing climate) project, funded by the EU's Interreg Programme, aimed to show how spatial planning could help biodiversity adapt to climate change. It brought together planners, policy makers and scientists from England, France and the Netherlands. It included Natural England (lead provider), the EA, Hampshire County Council and Kent County Council.

The project found that biodiversity must be given the space to adapt to climate change. For many habitats and species, this will be difficult because the landscape across Europe is fragmented and past decisions limit the opportunities for adaptation. Spatial planners have the tools – such as creating 'habitat corridors', 'ecological networks' and 'green infrastructure' – to help create a landscape and coastline that can withstand the effects of climate change.

See www.branchproject.org

issue	impact/risk	local authority policy response	guidance
biodiversity	<p>38 per cent of UK BAP habitats and 27 per cent of UK BAP species are still in decline, and 54 per cent of SSSI's are in an unfavourable condition.</p> <p>Research projects have demonstrated that the climate space of UK species is changing: those that are currently at their southerly limit may disappear and those at their northerly will potentially thrive.</p>	<p>Ensure protected sites (Natura2000 and SSSI) are maintained in good condition.</p> <p>Use spatial planning to develop 'habitat corridors' and ecological networks' to help species move.</p> <p>Incorporate 'green infrastructure' into development plans.</p>	<p>Defra's 'Conserving biodiversity in a changing climate'¹⁹</p> <p>MONARCH²⁰</p> <p>BRANCH²¹</p> <p>Green infrastructure²²</p>
homes	<p>By 2050, only 30 per cent of housing stock will have been constructed post-2006. The remaining 70 per cent will need adaptation measures retrofitted.</p>	<p>Widespread adaptation of existing homes and buildings is essential.</p> <p>Raise awareness with householders.</p>	<p>Retrofitting report – <i>Your home in a changing climate</i>²³</p> <p>Code for sustainable homes</p>
critical infrastructure	<p>58 per cent of water and sewerage works are at risk of flooding; 17 per cent of railway stations; 14 per cent of fire and ambulance stations; 13 per cent of police stations; 7 per cent of schools and care homes; and 6 per cent of hospitals.</p>	<p>Owners and providers of critical infrastructure should undertake a climate change risk assessment and develop an action plan to address climate risks.</p>	<p>UKCIP guidance on climate change risk assessments¹⁸</p>

issue	impact/risk	local authority policy response	guidance
planning	Over 200,000 new homes planned a year in the south east, protecting water quality and providing water, waste management and flood protection is expected to cost £20,200 for each new house.	Local authorities now have a duty to ensure LDFs integrate climate change measures. Consider undertaking a comprehensive water cycle study to inform LDFs.	PPS1 supplement ²⁵ SEA & climate change guidance ²⁶ Adaptation checklist for developments ¹⁸ Checklist case study companion guide ²⁷ ESPACE project ²⁸ TCPA climate change adaptation by design ²⁹ Water cycle studies ³⁰



case study 4 ESPACE

The ESPACE (European spatial planning: adapting to climate events) project was a four year programme of work funded by the EU's Interreg Programme, and included the EA, Hampshire County Council, Surrey County Council, West Sussex County Council, the South East Regional Assembly and the South East Climate Change Partnership.

The project found that existing spatial planning frameworks are poorly developed to minimise the risk of climate change. Robust spatial planning has a crucial part to play and ESPACE aims to tackle this problem by ensuring that adaptation strategies are incorporated into spatial planning systems.

As part of the project, water resource maps which factor in both future climate change and proposed housing and population growth figures were produced for the South East Plan. A climate change guide for planners was also produced. See www.espace-project.org

where can I go for more information?

Environment Advisory Service (EAS)
www.eas.local.gov.uk

Health Protection Agency
www.hpa.org.uk

LACORS' climate change toolkit for regulatory services
www.lacors.gov.uk

The Local Government Association (LGA)
www.lga.gov.uk

The LGA climate change commission
climatechange.lga.gov.uk

Environment Agency (EA)
www.environment-agency.gov.uk

The Nottingham Declaration website
www.nottinghamdeclaration.org.uk

UK Climate Impacts Programme (UKCIP)
www.ukcip.org.uk

Town and Country Planning Association (TCPA)
www.tcpa.org.uk

Regional climate change partnerships
South west – www.oursouthwest.com/climate
South east – www.climatesoutheast.org.uk
London – www.london.gov.uk/climatechangepartnership
East of England – www.sustainabilityeast.org.uk
East Midlands – www.emra.gov.uk/climatechange
West Midlands – www.sustainabilitywestmidlands.org.uk/wmccp
North west – www.climatechangenorthwest.com
North east – www.northeastassembly.gov.uk/page.asp?id=88
Yorkshire & Humber – www.yourclimate.org

Devolved climate change links
Wales – www.newydd.cymru.gov.uk/topics/environment/countryside/climate_change/?lang=en



notes

- 1 For more information see: *An Introduction to the local performance framework – delivering better outcomes for local people*, CLG November 2007 at: www.communities.gov.uk/publications/localgovernment/localperformanceframework
- 2 *National performance indicators for local authorities and local authority partnerships* at: <http://www.communities.gov.uk/localgovernment/performanceframeworkpartnerships/nationalindicators/>
- 3 www.communities.gov.uk/publications/planningandbuilding/developmentflood
- 4 www.environment-agency.gov.uk/commondata/acrobat/cfmp_1426671.pdf
- 5 www.environment-agency.gov.uk/subjects/flood/826674/
- 6 maps.environment-agency.gov.uk/wiyby/mapController
www.environment-agency.gov.uk/maps/info/floodmaps/
- 7 www.defra.gov.uk/environ/fcd/policy/surfacewaterdrainage.htm
- 8 www.ciria.org/suds/publications.htm
- 9 www.ciria.org
- 10 www.environment-agency.gov.uk
- 11 www.netcoast.nl/
www.ehsni.gov.uk/biodiversity/hap_uk/coast/icm.htm
- 12 www.defra.gov.uk/environ/fcd/policy/smp.htm
- 13 www.communities.gov.uk/planningandbuilding/buildingregulations/legislation/englandwales/codesustainable
- 14 www.london.gov.uk/trccg/publications.jsp
- 15 www.environment-agency.gov.uk/subjects/waterres/287169/1917628/?lang=_e
- 16 www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080702
- 17 www.ukcip.org.uk/index.php?option=com_content&task=view&id=62&Itemid=184
- 18 www.ukcip.org
- 19 www.ukbap.org.uk/Library/BRIG/CBCCGuidance.pdf
- 20 www.ukcip.org.uk/index.php?option=com_content&task=view&id=330
- 21 www.branchproject.org
- 22 www.greeninfrastructure.co.uk/index.html
- 25 www.cabe.org.uk/AssetLibrary/9690.pdf
- 26 www.environment-agency.gov.uk/commondata/acrobat/seaccjune07_1797458.pdf
- 27 www.london.gov.uk/climatechangepartnership/adapting-mar07.jsp
- 28 www.espace-project.org
- 29 www.tcpa.org.uk/downloads/20070523_CCA_lowres.pdf
- 20 publications.environment-agency.gov.uk/pdf/GEAN0107BLLN-e-e.pdf

List of 'named partners' for duty to co-operate in regard to LAAs:

District councils

Environment Agency

Natural England

Fire and rescue authorities

Jobcentre Plus

The Health and Safety Executive

The Broads Authority

National Park Authorities

Youth offending teams

Police authorities

Transport for London

Chief officer of police

Local probation boards

Probation trusts and other providers of probation services

Primary Care Trusts

National Health Service trusts

NHS Foundation Trusts

Joint waste authorities

Joint waste disposal authorities

Regional Development Agencies

The Learning and Skills Council

Sport England

English Heritage

Arts Council

Museums, Libraries and Archives Council

Highways Agency

Metropolitan passenger transport authorities

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The Local Government Association is the national voice for more than 500 local authorities in England and Wales. The LGA group comprises the LGA and four partner organisations which work together to support, promote and improve local government.



Code no F/CA275
ISBN 978 1 84049 614 7

Photographs: Third Avenue
Printed on 100% recycled stock by Victoria House Printing Co,
Unit 1, Stour Road, London E3 2NT
Design by Tattersall Hammarling & Silk Ltd
© LGA May 2008