



A Step Forward: Adaptation to Climate Change

Climate North East...

a part of the Climate UK family...

Adrian Hilton

Climate North East



- Broad partnership
- Works across business, local government and communities
- Coherent evidence base
- Effective communications
- Effective and extensive networks
- Mitigation and Adaptation
- Provides functions of a Supporting Structure for CoM
- Part of the Climate UK 'family'



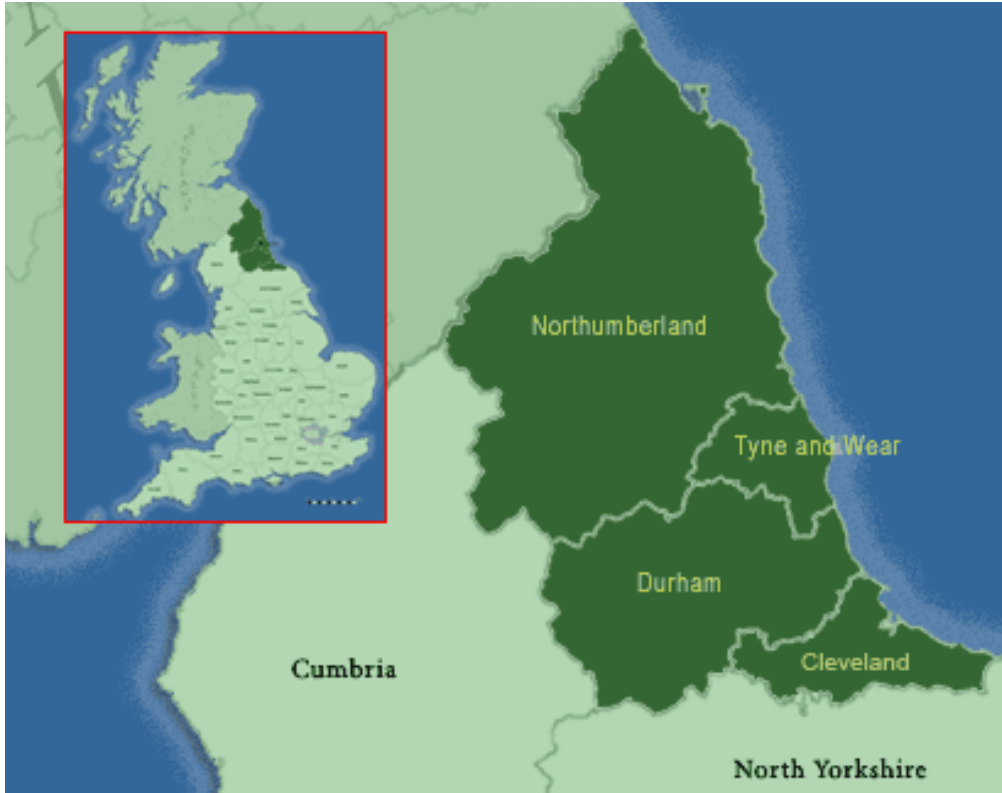
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Climate UK

- Climate South East
- Climate South West
- Sustainability East
- Climate East Midlands
- Climate North West
- Your Climate
- Climate North East
- Sustainability West Midlands
- London Climate Change Partnership

- + Devolved Administrations

The North East of England



- 4 Counties
- 12 municipalities (Local Authorities)
- All 'Unitary'
- Borders Cumbria, North Yorkshire and Scotland

Varied size and nature of the 12 municipalities



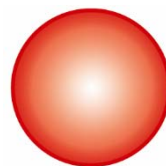
How we started....

- No detailed picture of how climate might impact the region
- No robust emissions inventory nor understanding of policy implications
- Economic implications of climate change for the region unknown



The 'Bottom Line' - what we needed to deliver

- Enhanced resilience of our infrastructure, communities and business and natural environment to climate change
- Reductions in Greenhouse Gas (GHG) emissions of 80% - by 2050
- Opportunities for competitive advantage and economic diversification realised





Adaptation

What is Climate Change Adaptation?

- measures to moderate and cope with climate change impacts
- not a one-off activity, but a continuous and incremental set of activities.

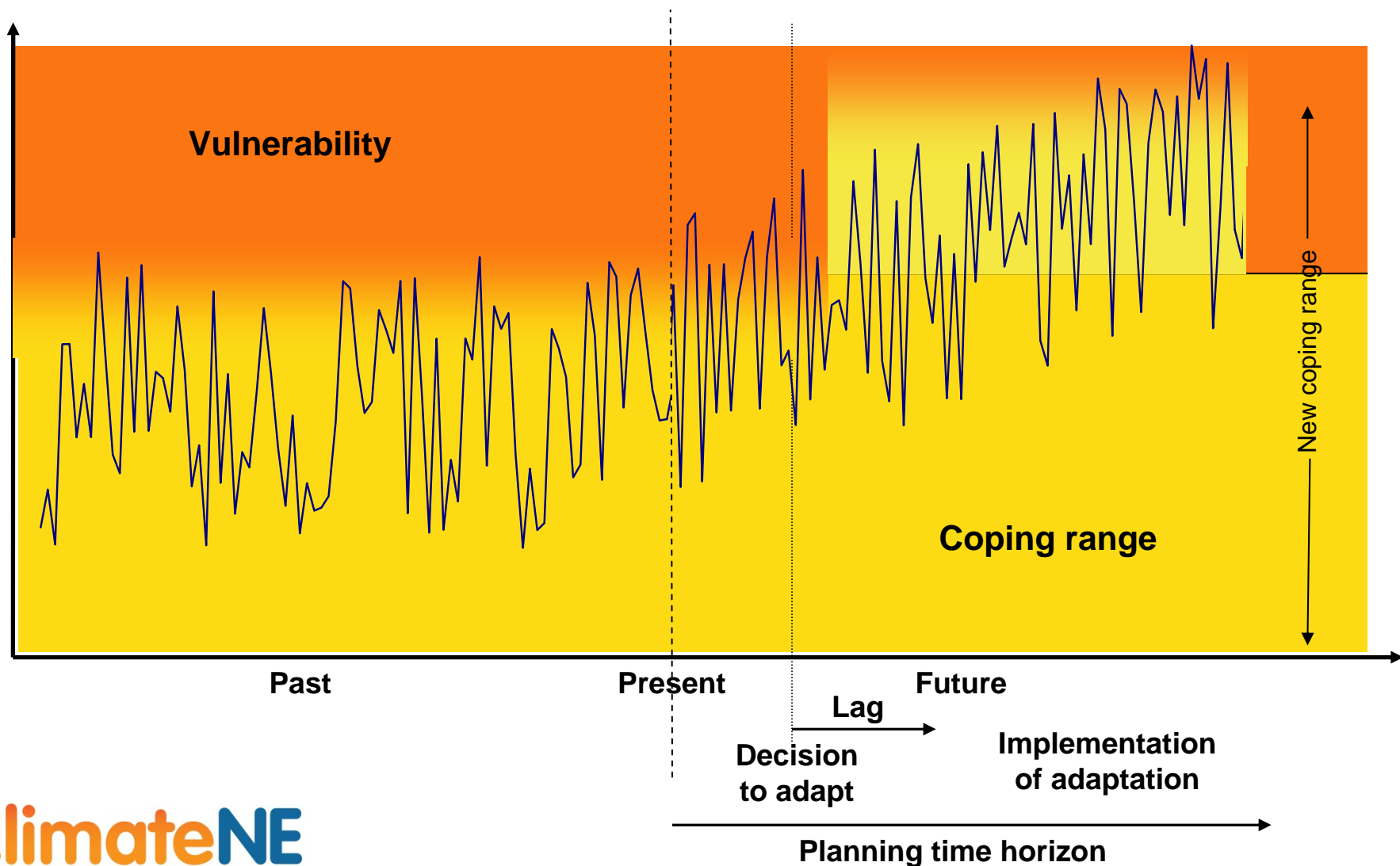
Physical actions e.g:

- ✓ raising the height of sea defences
- ✓ Increasing ventilation / cooling in buildings

Building 'Adaptive Capacity' e.g:

- ✓ Raising awareness of impacts
- ✓ Tools / context etc for decision makers

Climate sensitivity, vulnerability and adaptation



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Supporting action on climate change

Slide courtesy of UKCIP

Establish exposure to past / current climate.....



What can we expect in our region?

- Changing weather patterns
- Warmer, wetter winters
- Hotter, drier summers
- Reduction in soil moisture in summer
- Increase in 'high intensity' rainfall events
- Polarisation of rainfall
- Higher incidence and severity of storm events
- Changes in biodiversity
- Changing patterns of public usage – natural environment



Developing the case for action....

▶ Establish current exposure

▶ Identify key vulnerabilities

▶ Carry out Local Climate Impact Profiles (LCLIPs) or similar process.
Review of current / past exposure / vulnerability

▶ Provide data / narrative as basis for discussions with service / asset managers

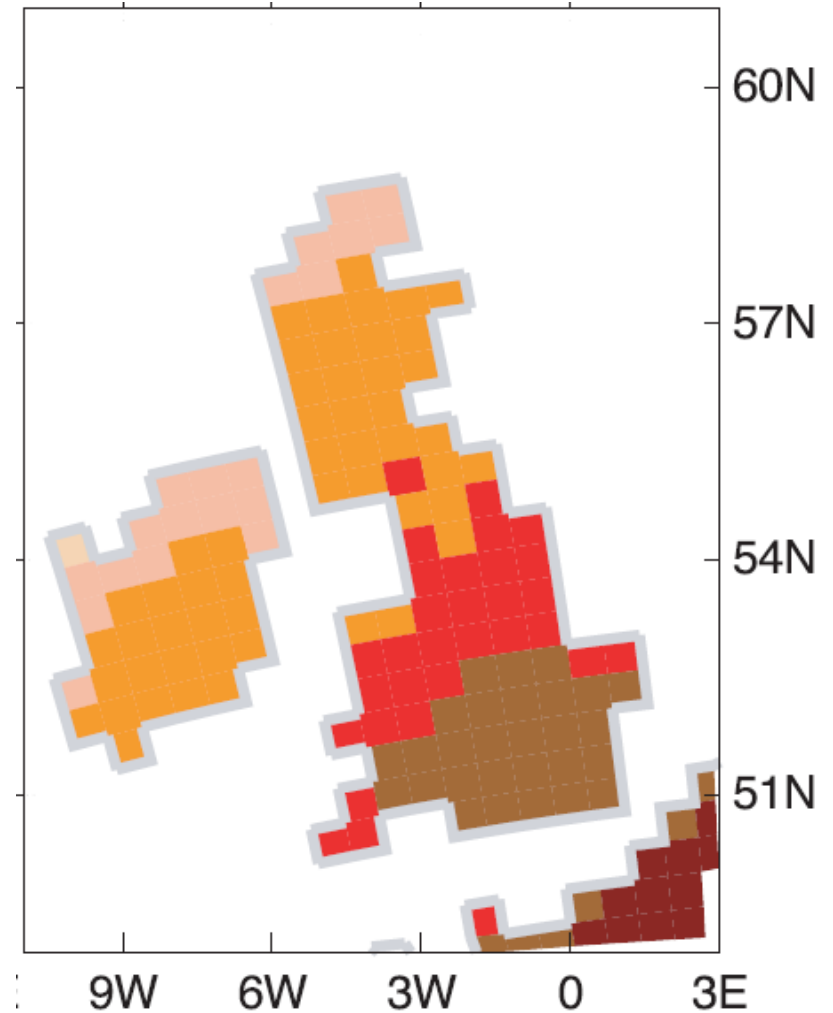
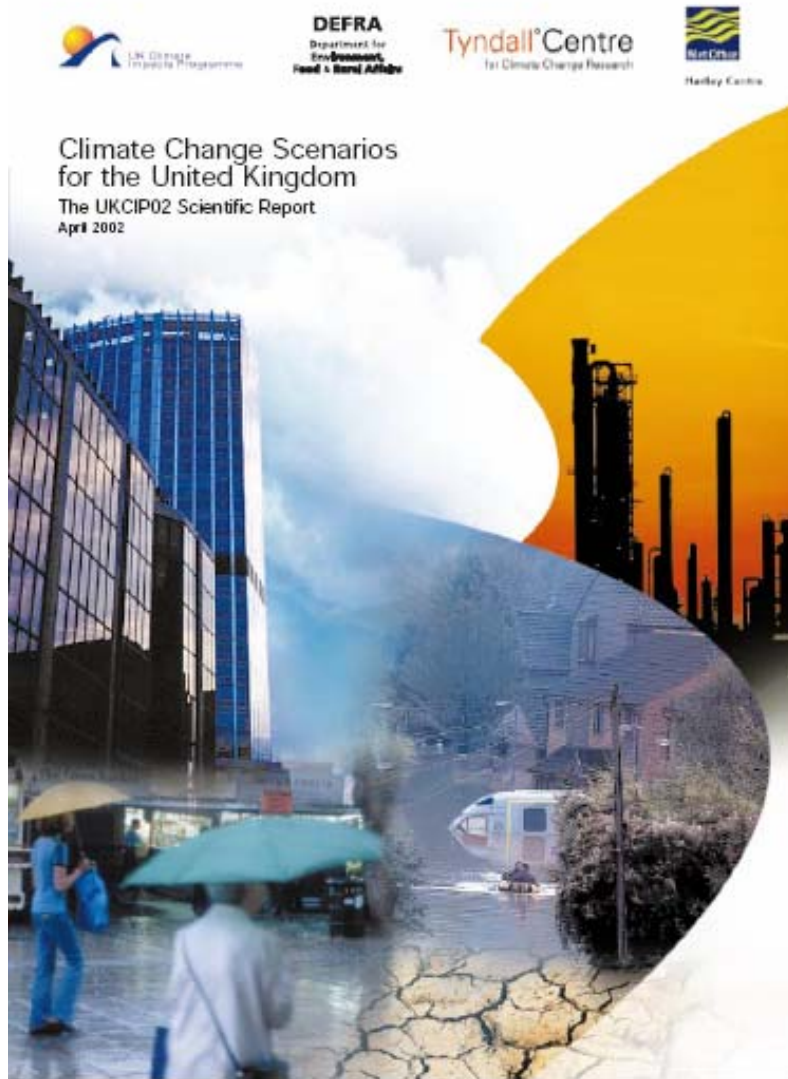
▶ Dialogue to establish sensitivity



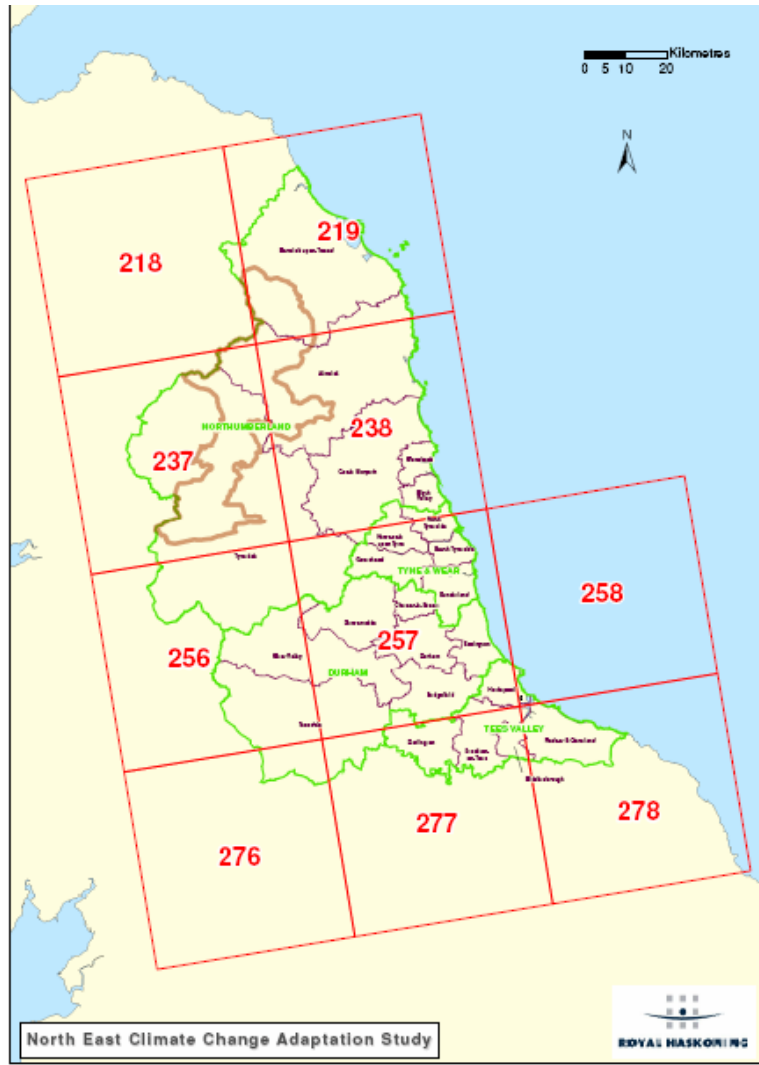
Establish likely impacts of future climate change.....



Resolution...



Issues...



Does not consider:

- Altitude
- Topography
- Proximity to coast etc

Gives:

- Broad, generic data –
- Warmer, wetter winters
- Hotter, drier summers

Climate Change Adaptation in the North East...



"We all need to act now - our future quality of life depends on it"



North East
Climate Change
Adaptation Study



3 Data Resolutions.....



Climate Change (2050s)...



Environment
Agency
Regional
Weather
Impact
Generator



Impacts...



- Areas at risk of flooding from rivers, streams or the sea;
- Flood and coastal defences;
- Foul and surface water drainage systems;
- Groundwater flooding and minewater breakouts;
- Water resources and supply;
- Electricity network;
- Gas supply network;
- Telecommunications network;
- TV and radio transmitters and centres;

- Rail and Metro network;
- Road network;
- Fuel storage and distribution infrastructure;
- Road and rail bridges;
- Road and rail embankments and cuttings;
- Public buildings and business parks;
- Vulnerable populations;
- Residential housing;
- Port facilities; and
- Emergency planning.

Earwig modelling...



Does consider:

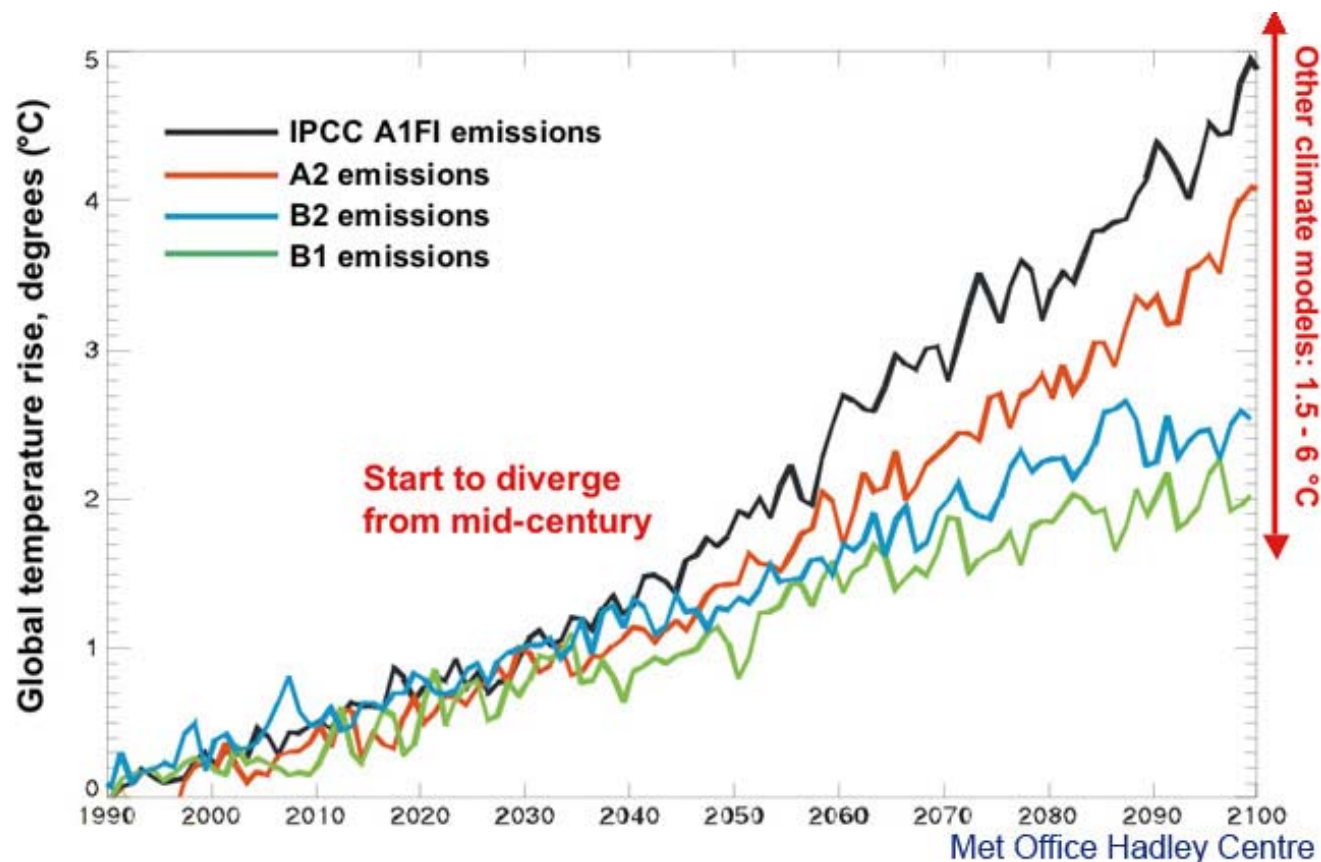
- Altitude
- Topography
- Proximity to coast etc

Gives: (caveat)

- High resolution
- Considerably more detailed
- Allows understanding of impacts at a level that enables ***ACTION***

Why choose the 2050s?

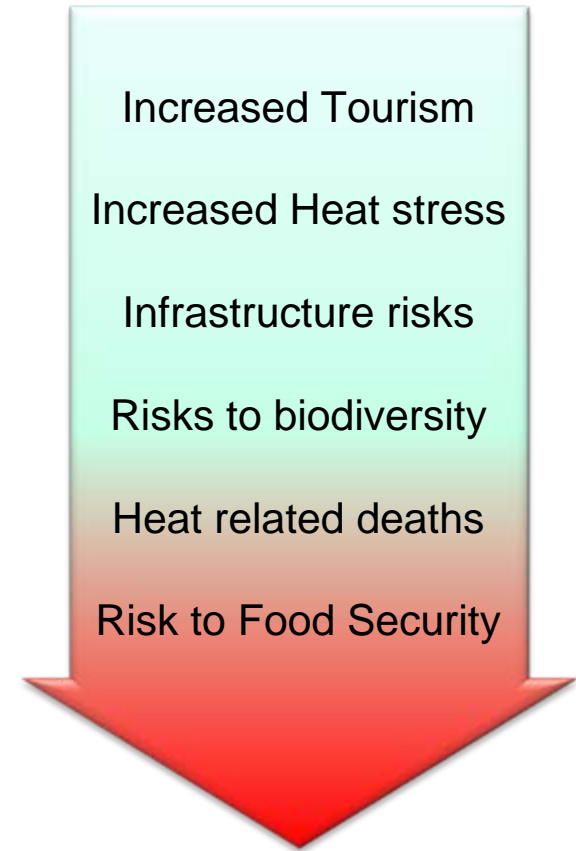
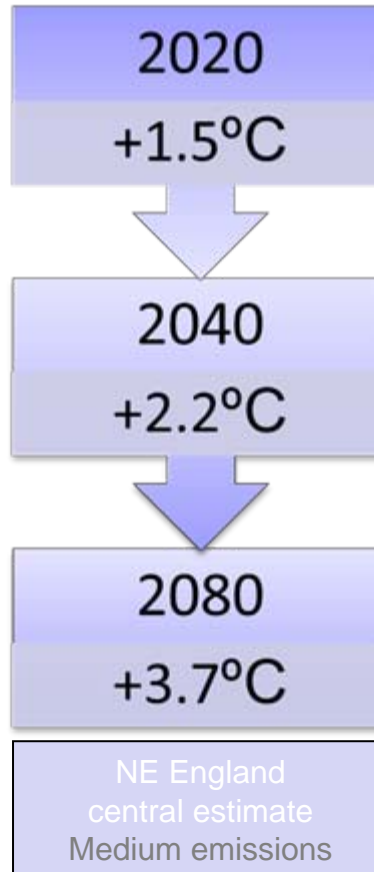
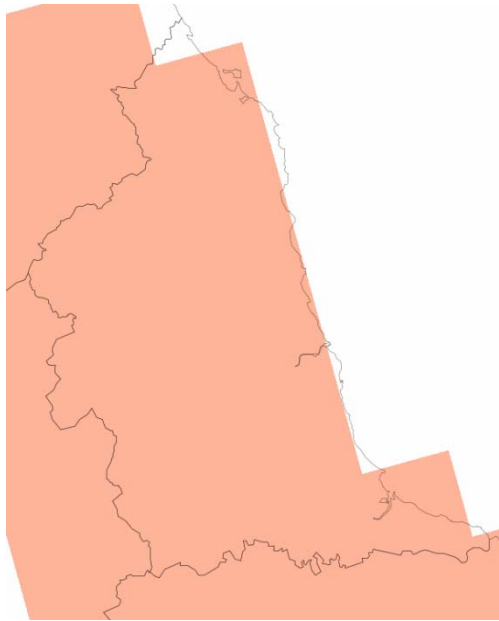
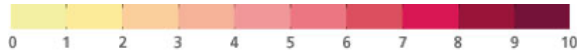
- Climate change is already happening
- Stopping GHGs today will not prevent it
- CC over next 30-50 yrs due to historic emissions
- Within long-term planning horizons





2009

Summer average temperature



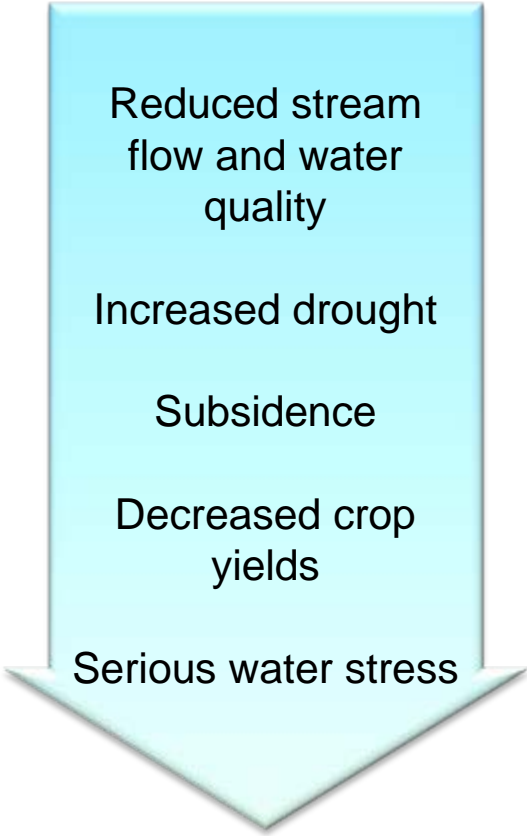
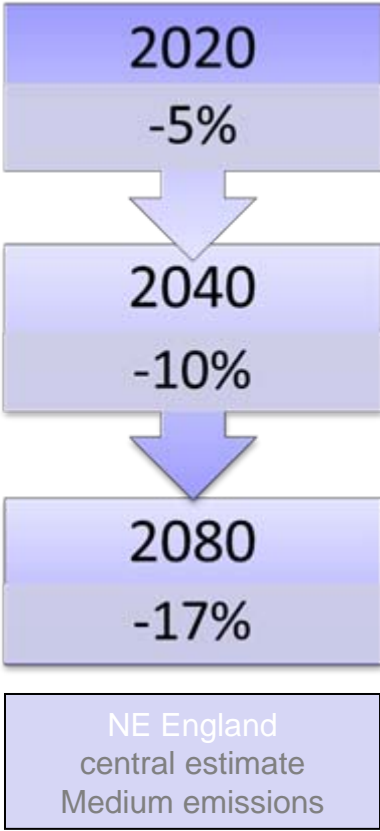
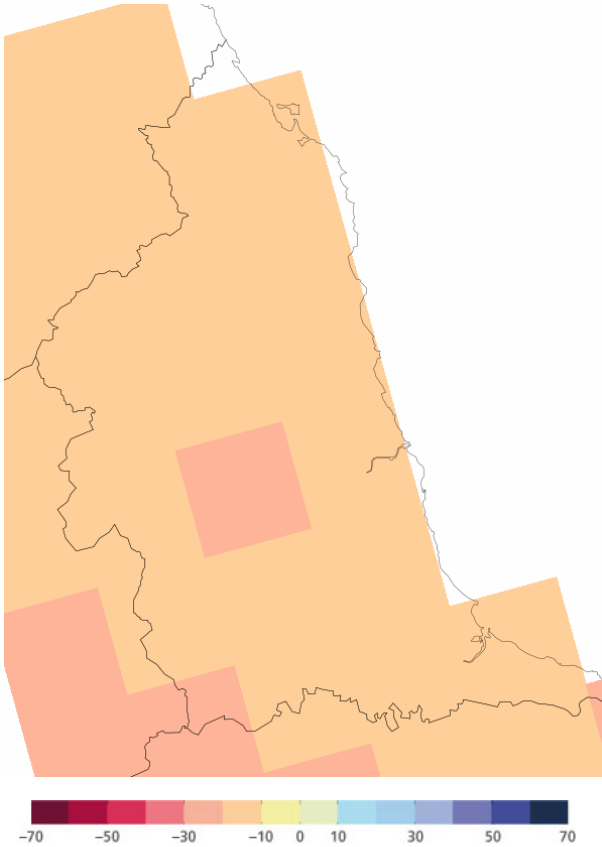
The change for the 2080s is very unlikely to be less than 2°C and very unlikely to be more than 5.8°C

North East Study

2 – 2.3°C



For rainfall we could see significant summer decreases



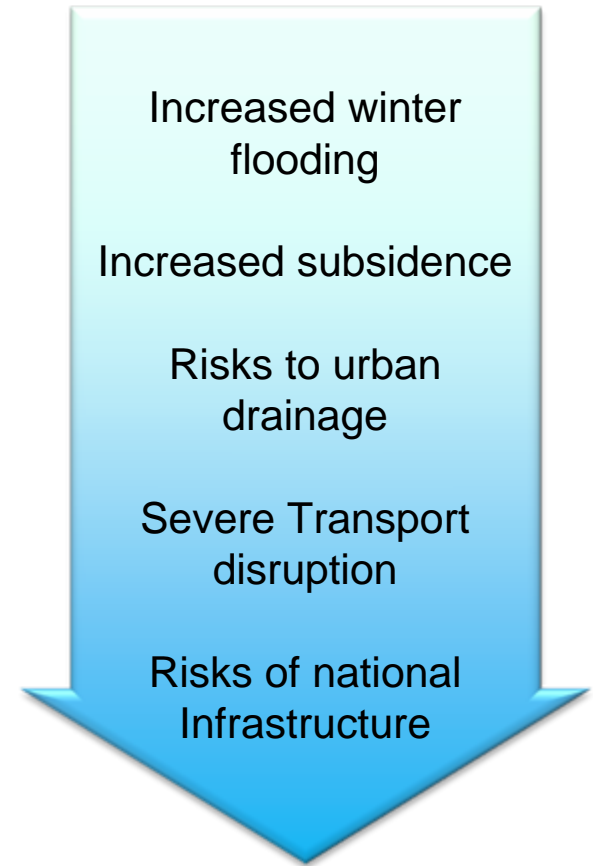
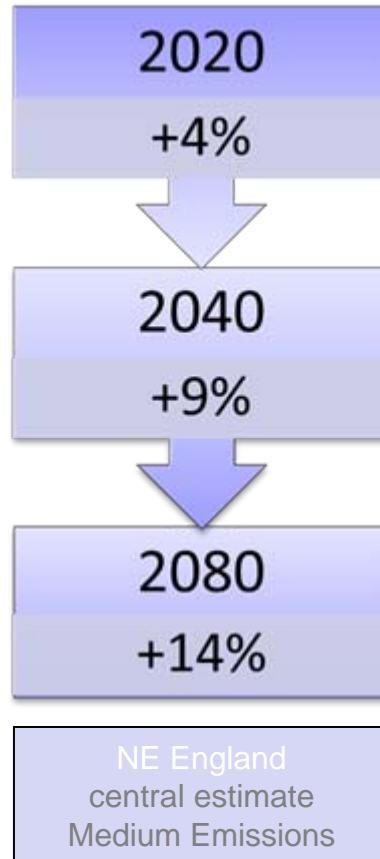
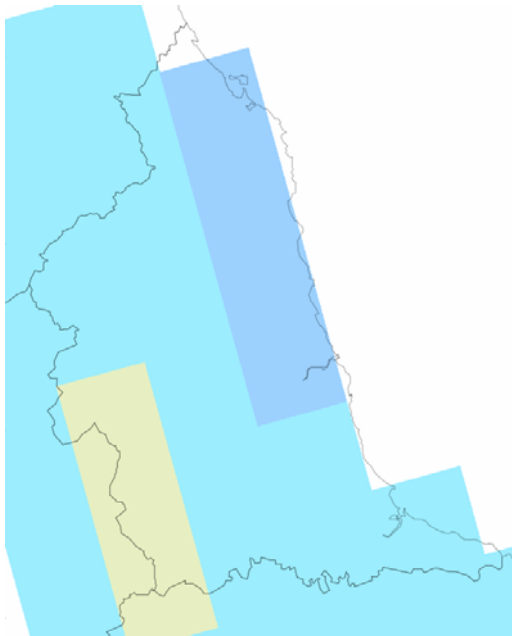
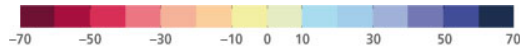
For the 2080s the change is very unlikely to be lower than -35% and very unlikely to be higher than +1%



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mostly ~5% up to 10%

For rainfall we see significant winter increases



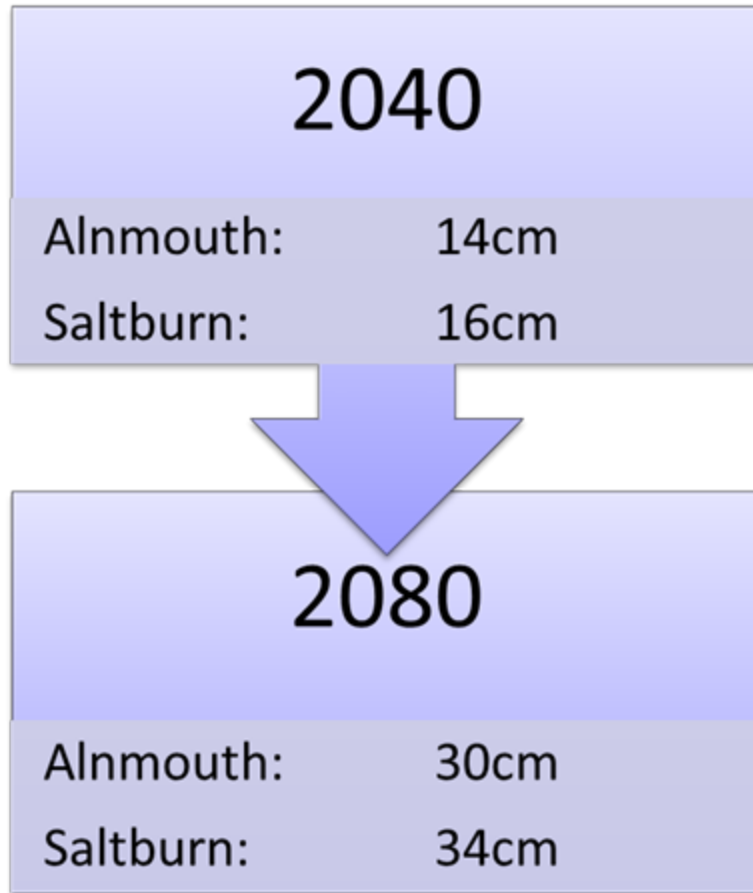
For the 2080s the change is very unlikely to be lower than +2% and very unlikely to be higher than +32%

North East Study

8 to 20%



Relative sea level rise (medium emissions, 50th percentile)



North East Study

30cm ↑





**Morpeth
September 2008 - £10 million?**

Source: www.journal.co.uk

Building Adaptive Capacity

Logistics: vulnerability of supply chain, utilities and transport infrastructure

Finance: implications for investment, insurance and stakeholder reputation

Markets: changing demand for goods and services

Process: impacts on production processes and service delivery

People: implications for workforce, customers and changing lifestyles

Premises: impacts on building design, construction, maintenance and facilities management

Management implications

Emerging Legal Imperative:

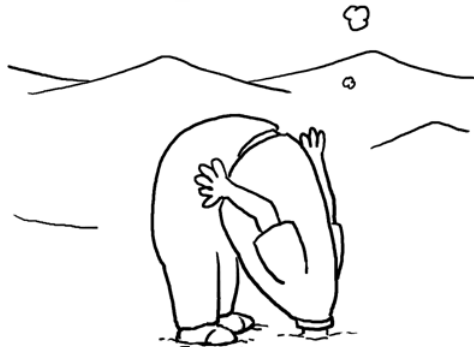
- Climate Change is now regarded as ‘Reasonably Foreseeable’
- Professionals will need to explicitly address climate issues
- The Freedom of Information Act
- Both individuals and the organisations they represent may be liable



THIS IS THE SOLUTION WE'VE DEvised FOR DEALING WITH THE FLOODING CAUSED BY CLIMATE CHANGE.



BURYING MY HEAD IN THE SAND OVER CLIMATE CHANGE IS MUCH EASIER NOW THAT HALF THE WORLD'S TURNED TO DESERT!



"We all need to act now - our future quality of life depends on it"

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Adaptation Study





We're getting the data – we need to use it (wisely!)



Adaptation

‘Resilience’ component:

- Sectoral impacts assessed
- Adaptive actions identified & prioritised
- Actions implemented

- ✓ ‘vulnerability threshold’ raised
- ✓ Improved business continuity
- ✓ Significant risk aversion
- ✓ Improved public perception
- ✓ Reduced future costs / liabilities
- ✓ Improved ‘Adaptive Capacity’

Next Steps...



Continue to support SEAP development and delivery: mitigation

National
Supporting
Structure?

Mayors
Adapt

National
Supporting
Structure for
Adaptation?

Building resilience: Adaptation

ClimateNE

climate uk



Climate North East - Business Support



- Dedicated Business e-zine
- Business Hub
- Connect Friday
- Accredited Resilience Qualifications
- Business Survey
- Economics of Climate Change
- Big EcoShow
- Networks

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What business organisations are saying

“There is no doubt that moving to a low-carbon and resilient economy offers significant commercial opportunities. I believe that Climate NE are invaluable in supporting businesses to achieve this ambition.

-Chief Executive of North East Chamber of Commerce



“Failing to adapt and build resilience will hinder our ability to realise the economic opportunities presented by the move to a low carbon economy”

- Head of Policy, NECC

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Business Surveys.....

80% of
businesses
believe climate
change is real
and happening

60% affected
by severe
weather in last
2 years

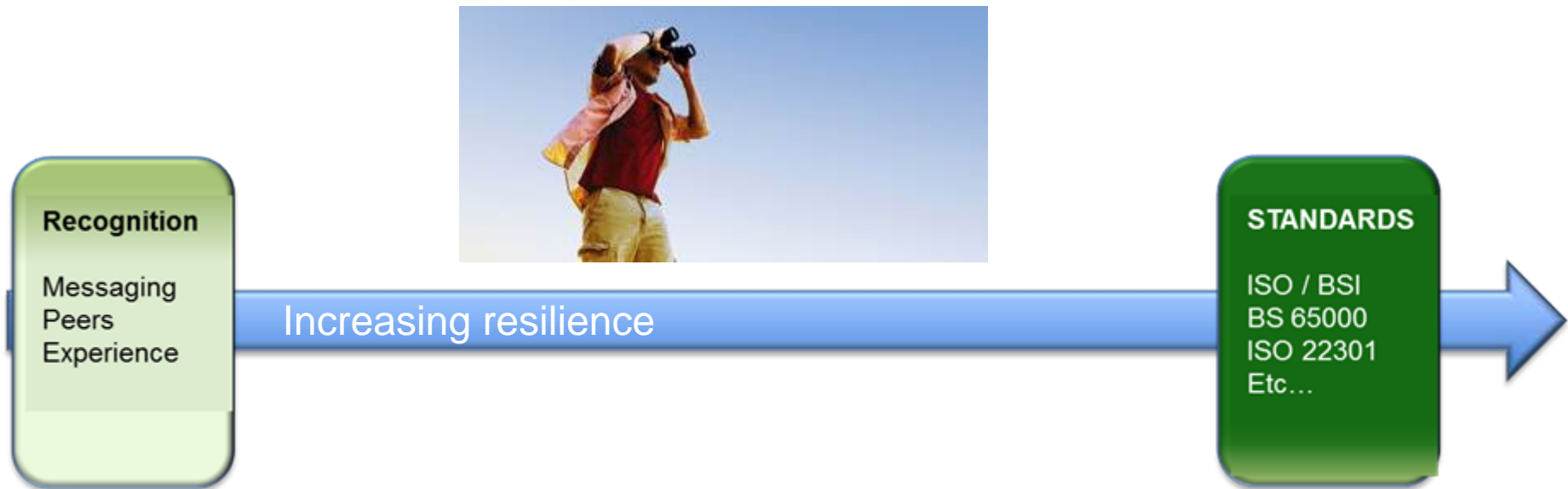
32%
incorporating
severe
weather into
planning

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Effects on business.....



Resilience – a journey, not a destination....



.....but how to travel?

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Resilience – a journey, not a destination....



Tools for Adaptation...



- Climate UK – significant experience in supporting adaptation across all sectors
- Severe Weather Impact Monitoring System (SWIMS) for municipalities



- Forthcoming Advanced Impact Monitoring System (AIMS)
- Business Resilience Health Check
- Fully accredited Business Resilience Qualification/s



Links...

- Climate North East: www.climatenortheast.com
- Climate UK: www.climateuk.net
- Severe Weather Impact Monitoring System (SWIMS): contact Adrian Hilton: adrian.hilton@climatenortheast.com
- Forthcoming Advanced Impact Monitoring System (AIMS): contact adrian.hilton@climatenortheast.com
- Business Resilience Health Check: <http://www.businessresiliencehealthcheck.co.uk/>
- Fully accredited Business Resilience Qualification/s. contact adrian.hilton@climatenortheast.com and see <http://www.youtube.com/watch?v=4KgXGu3pdPQ>



Here to work with you,
Thank you

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