

How is the Climate Changing in NE England?

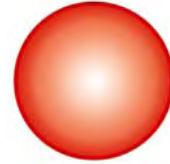
Adrian Hilton

Regional Climate Change Coordinator

sustaine

The 'Bottom Line' - what the Region needs to deliver

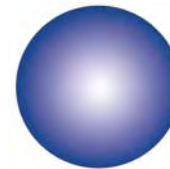
➤ Enhanced resilience of our infrastructure, communities and business and natural environment to climate change



➤ Reductions in Greenhouse Gas (GHG) emissions of 80% - by 2050

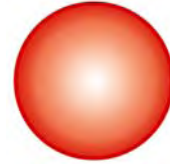


➤ Opportunities for competitive advantage and economic diversification realised



To achieve this we need...

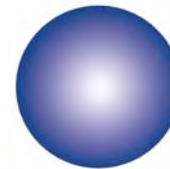
➤ A clear picture of how climate is likely to change in the region, what the impacts of those changes are likely to be and how we can adapt to them



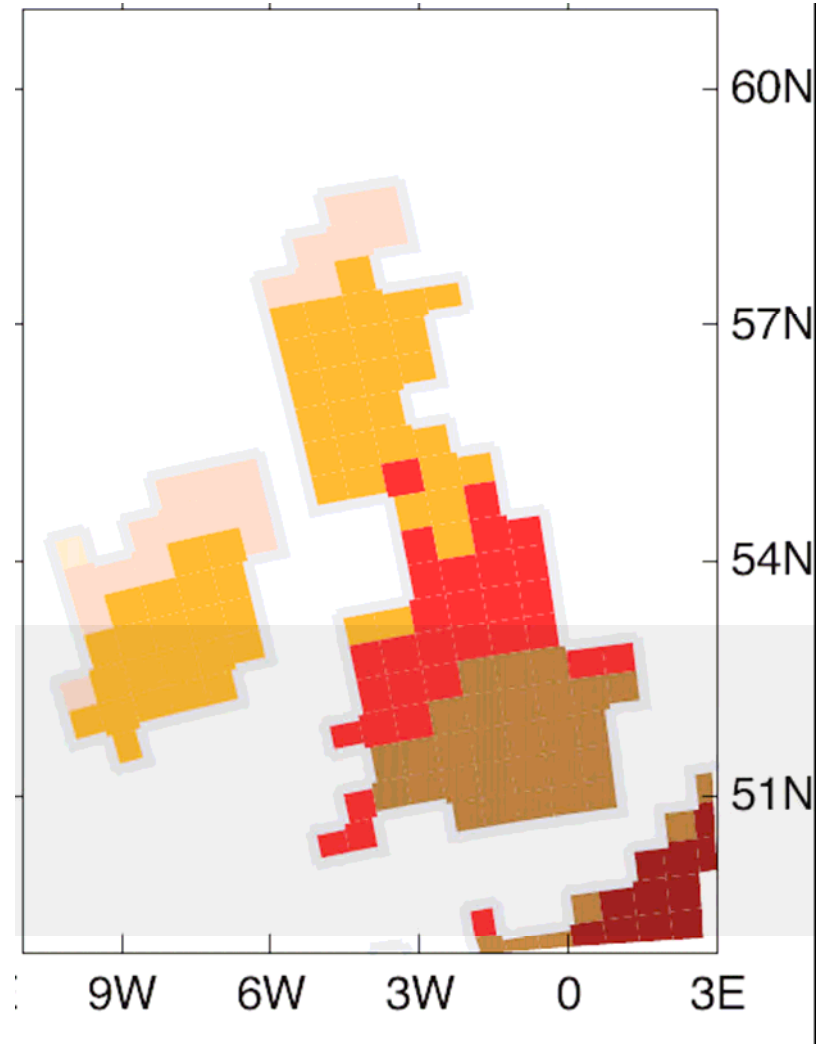
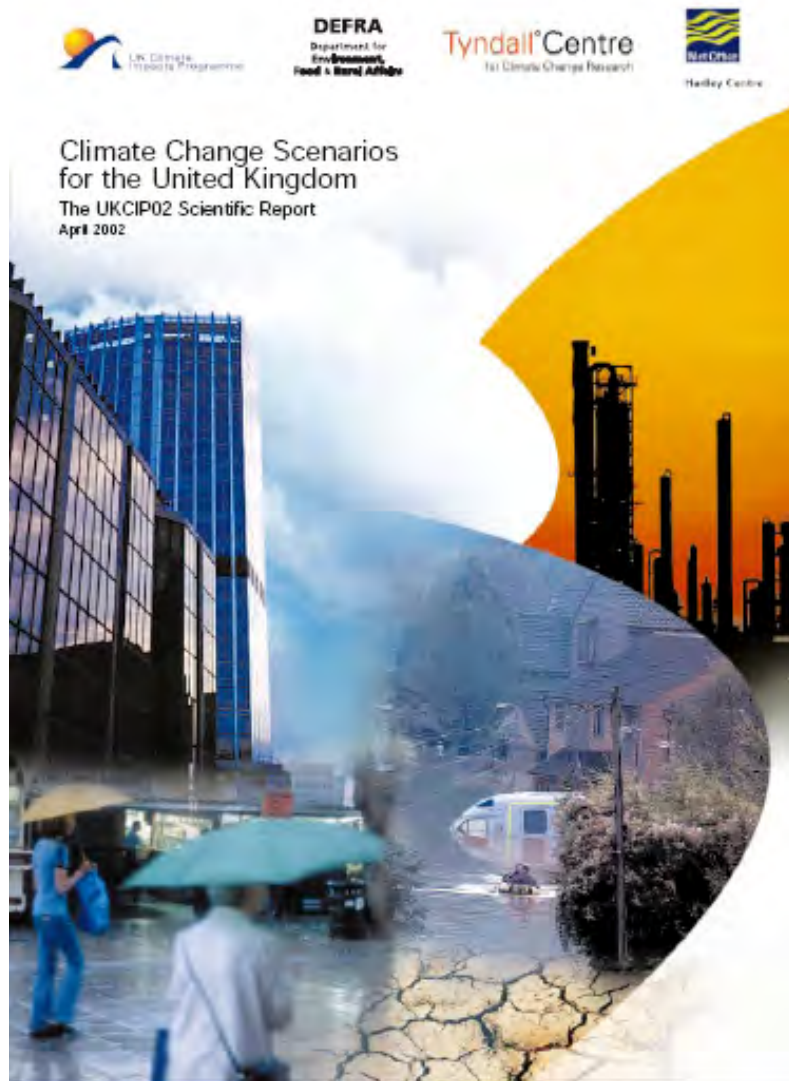
➤ An understanding of our emissions and our policy / lifestyle choices on those emissions



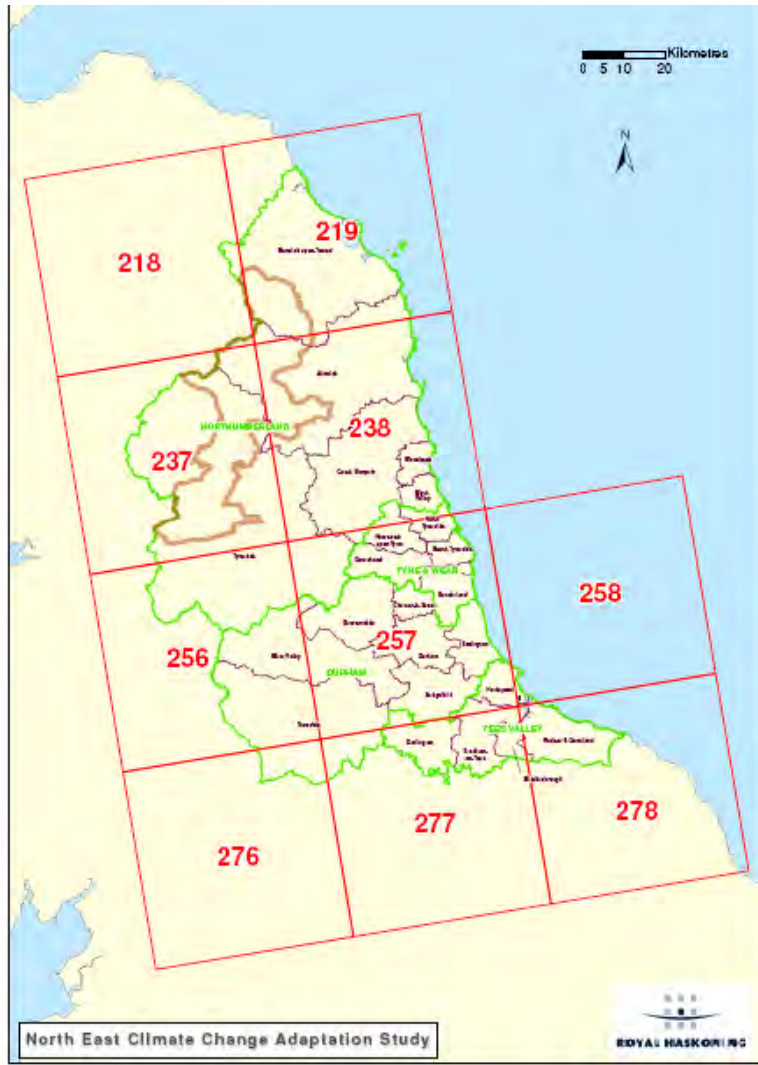
➤ To be cognisant of our economy, its strengths and weaknesses, its flexibility and its exposure / vulnerability to change



Building the picture: Resolution...



Issues...



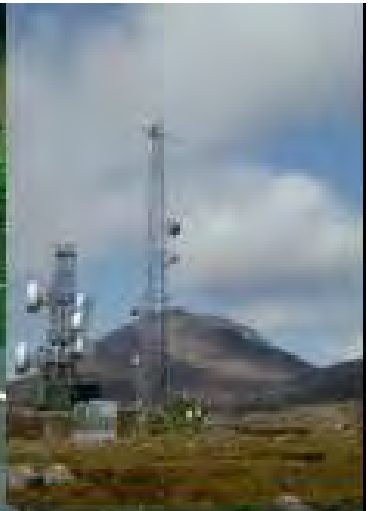
Does not consider:

- Altitude
- Topography
- Proximity to coast etc

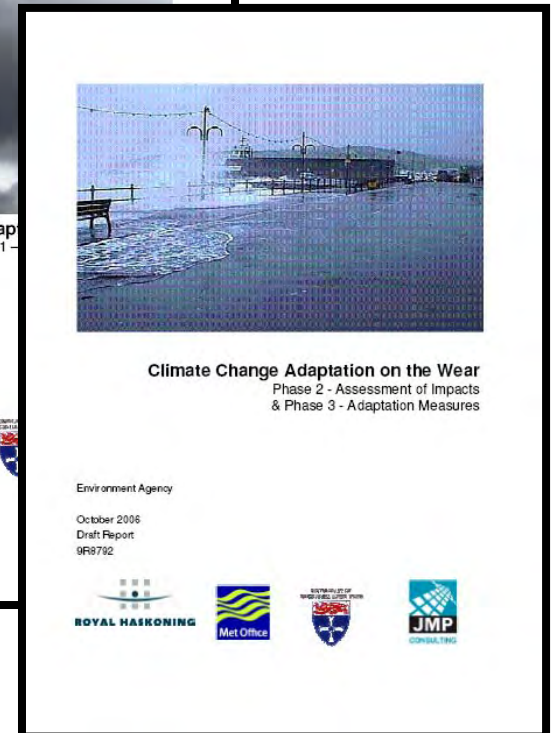
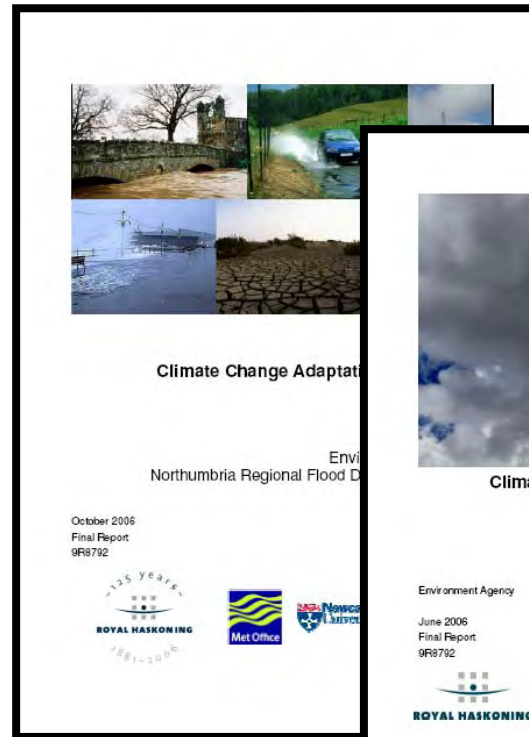
Gives:

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

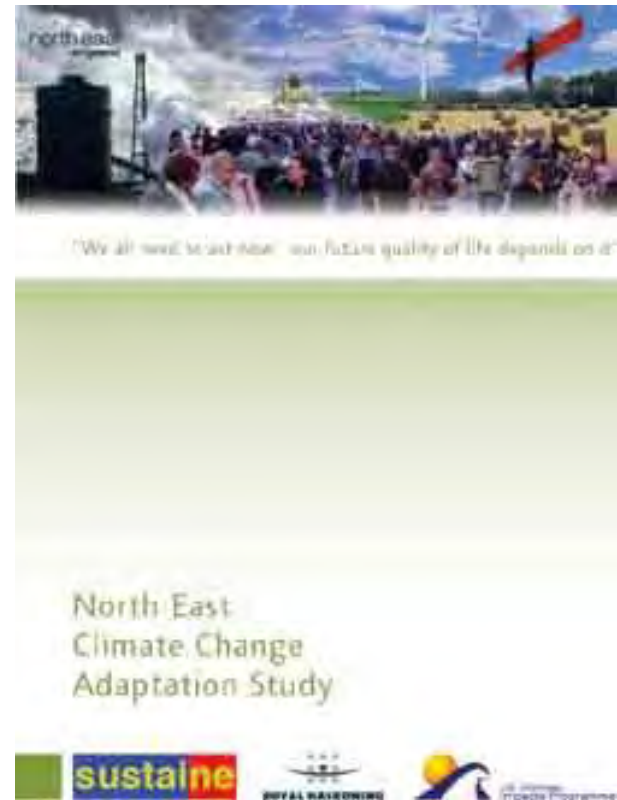
North East Adaptation



Wear Catchment Study...



Climate Change Adaptation in the North East...



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:

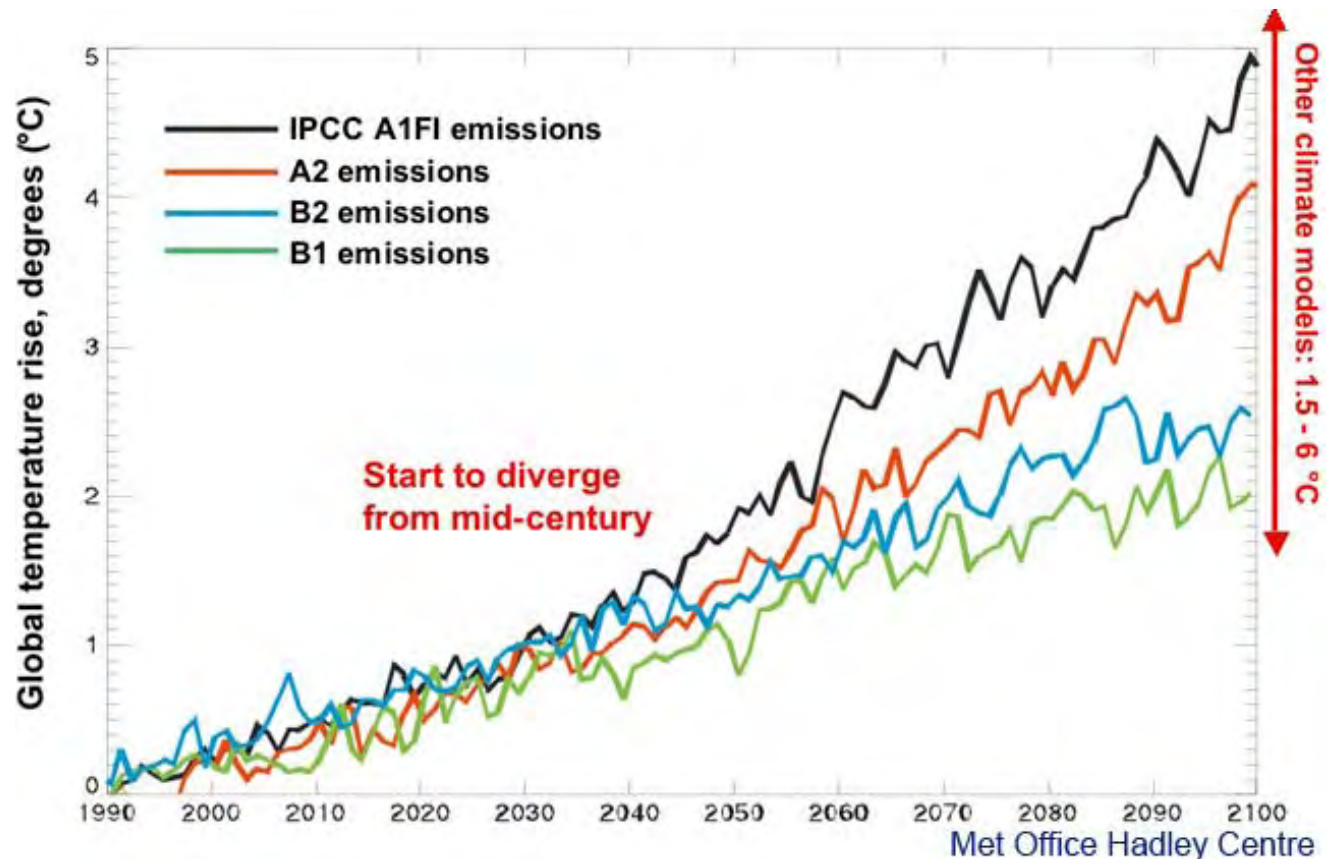
- Altitude
- Topography
- Proximity to coast etc

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



Climate Change is already taking place...

- In the last 100 years the planet has seen a 0.74°C rise.
- 0.4°C rise in the last 30 years and it is accelerating
- A 2°C rise would see summer temperatures in Berlin commonly reaching 50°C.



North East Study Outputs...





Average daily temp

● Annual	1.7 to 1.8 °C	↑
● Winter	1.2 to 1.4 °C	↑
● Spring	1.5 to 1.7 °C	↑
● Summer	2.0 to 2.3 °C	↑
● Autumn	1.9 to 2.1 °C	↑

North East Outputs...

Extreme temperatures

- Cold 1.1 to 1.7 °C 
(remains sub-zero)
- Hot 2.6 to 3.1 °C 

3°C doesn't sound like much ...

... it represents a rise in temperature comparable with the global heating that occurred between the last Ice Age (15,000 years ago) and the 18th Century

this is projected for the 2050s

Changes in our communities...

2003



2050



North East Study Outputs...



Average rainfall



Annual

mostly ~5%



up to 10%



Winter

8 to 20%



Autumn

up to 10%



Summer

25 to 37%



Spring

small

variable

North East Outputs...



Extreme rainfall - variability across region

- Some locations, 10 to 20% increase
- Some locations, negligible change
- Some locations slight decrease

North East Study Outputs...



Snow & Frost



Winter snowfall

45 – 83%



Autumn and spring snowfall



almost none



Frost days (per year)

30 - 50%



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



Chris Madden

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"

North East
Climate Change
Adaptation Study

The block contains the title 'North East Climate Change Adaptation Study' and three logos at the bottom: 'sustaine' in a red and blue box, 'ROYAL WAIRARAPA' with a crown icon, and 'Woodlands Programme' with a tree icon.



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

Climate Change
Action Plan
for the North East
of England

The block contains the title 'Climate Change Action Plan for the North East of England' and the 'sustaine' logo at the bottom.

sustaine



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

Challenges....

- Current economic climate may well disrupt delivery and prioritisation
- Adaptation – building ‘adaptive capacity’ / encouraging physical adaptation
- C02 Trajectories – influencing policy re-alignment / enhancement
- Communications – coherent message across partners / resource



Source: freepfoto.com

Challenges....

- Do more of: Take **ACTION**
- Do less of: model / talk and defer in hope of achieving **certainty**
- Do differently: genuinely **integrate** climate considerations into policy and decision making
- Become comfortable with **risk, uncertainty and decision making**

