



Essex County Council

# Essex Climate Action Commission

<b>10:00</b>	<b>Tuesday, 07 July 2020</b>	<b>Online Meeting</b>
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**For information about the meeting please ask for:**

David Claydon, Delivery Manager for the Essex Climate Action Commission

**Telephone:** 033301 36027

**Email:** [climate.commission@essex.gov.uk](mailto:climate.commission@essex.gov.uk)

**Membership** (Quorum: 7, including the Chair):

Lord John Randall (Chairman)  
Prajwal (Co-Chair)  
Daniel (Co-Chair)  
Cllr. James Abbott  
Catherine Cameron  
Mark Carroll  
Natalie Chapman  
Cllr. Peter Davey  
Ian Davidson  
Peta Denham  
Toddington Harper  
Prof. P Hobson  
Cllr. Ivan Henderson  
Heather Hilburn  
Prof. Aled Jones  
John Lippe  
Cllr. Sue Lissimore  
Dr Simon Lyster

Cllr. Mike Mackrory  
Dr Laura Mansell-Thomas  
Prof. Jacqueline McGlade  
Cllr. Robert Mitchell  
Right Revd. Roger Morris  
Rob Pilley  
Prof. Jules Pretty  
Dr Adam Read  
Jake Richards  
Jo Roberts  
Chloe Rose  
Jonathan Stephenson  
Prof. Graham Underwood  
Cllr. Simon Walsh  
Jenni Wiggle  
Charlotte Williams  
Rob Wise  
Dr Poone Yazdanpanah

## Essex Climate Change Action Commission meeting information

Meetings will be audio recorded for public dissemination. Commission members should note that all discussions in the main Commission meetings will, unless by exception, to be agreed in advance by the Chair, be released into the public domain.

The Commission Meetings will be held virtually using Zoom. Please do not attend County Hall as no one connected with this meeting will be present.

If you have specific access requirements or a need for documents in large print, Braille, Easy Read or alternative languages, please contact the Secretariat of the Commission before the meeting takes place.

The agenda is also available on the Essex County Council website, [www.essex.gov.uk](http://www.essex.gov.uk). From the Home Page, click on 'Running the council', then on 'How decisions are made', then 'council meetings calendar'. Finally, select the relevant committee from the calendar of meetings.

**Secretariat to support the work of the Commission:**

David Claydon, Delivery Manager for the Essex Climate Action Commission  
Philip Oldershaw, Cabinet Adviser to Cllr Walsh, ECC Cabinet Member for Environment & Climate Change Action  
Gemma Bint, Democratic Services Officer  
Jo Boyd-Wallis, Senior Strategy Adviser

		<b>Pages</b>
<b>1</b>	<b>Welcome, Apologies and Substitutions (10:00 - 10:05) - Lord Randall, Chairman</b>	
<b>2</b>	<b>Adapting to an already changing climate - a presentation by Kathryn Brown, Head of Adaptation at the Committee on Climate Change Secretariat (10:05 - 11:05)</b>	<b>3 - 31</b>
<b>3</b>	<b>Q&amp;A and Discussion Session (11:05 - 11:45)</b> This session will reflect on the presentation, discuss activities already in train and conclude with the agreement of key recommendations to be considered by the Council on how the county might respond to the already changing climate in Essex.	
<b>4</b>	<b>Workstream Update (11:45 - 11:55)</b> Verbal updates on the Community Engagement and Transport workstreams.	
<b>5</b>	<b>Meeting Close (11:55 - 12:00) - Lord Randall, Chairman</b> Provisional dates for subsequent Commission meetings are: 08/09/20    Transport 29/09/20    The Built Environment 27/10/20    Interim Report meeting TBC        Energy 12/01/21    Land use & Green Infrastructure TBC        Community Engagement 16/03/21    Year 1 report	

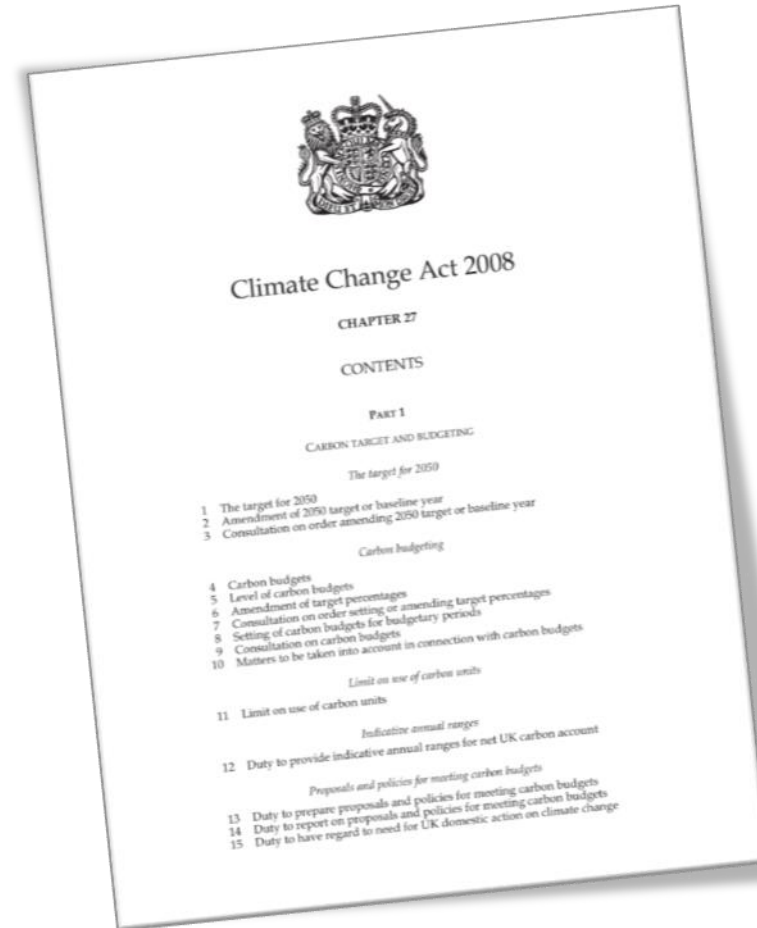
7<sup>th</sup> July 2020

# Adapting to climate change

Kathryn Brown, Head of Adaptation, Committee on Climate Change

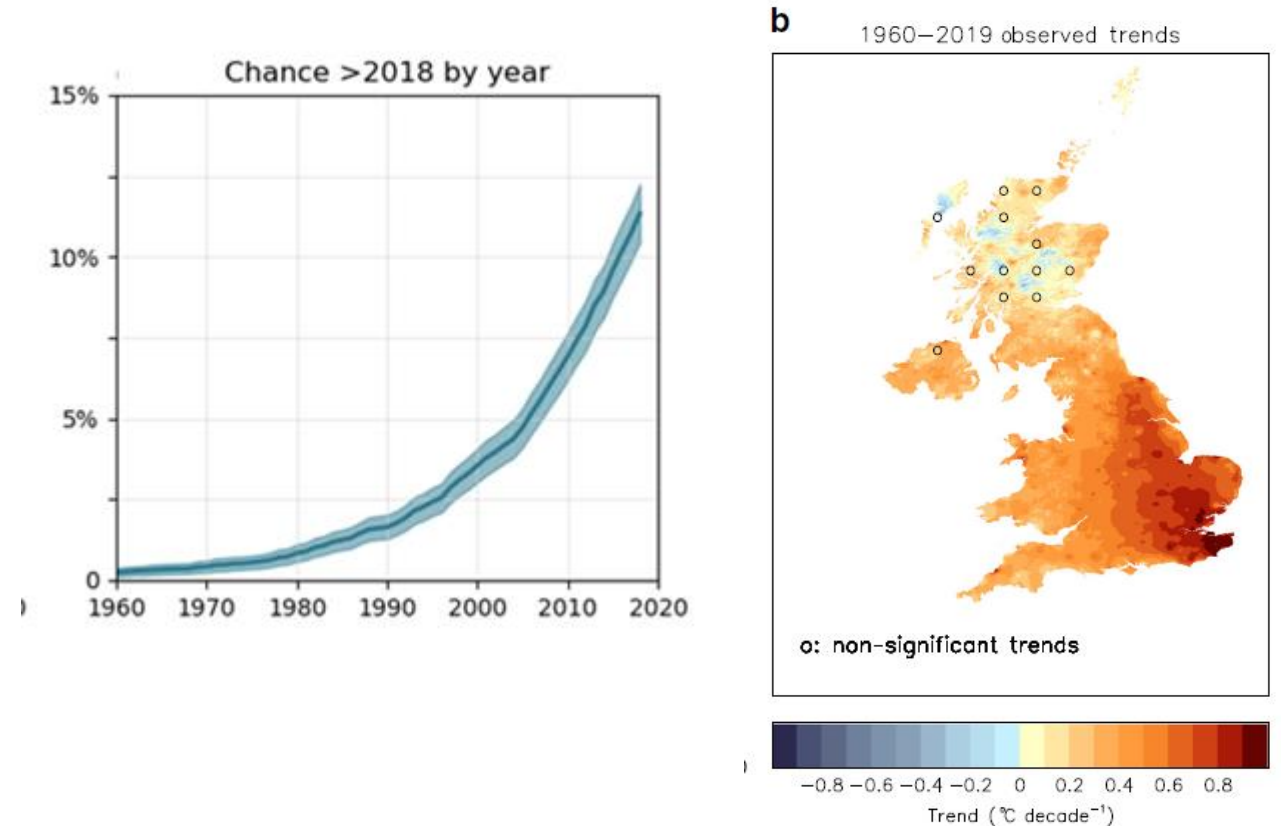
- The UK's climate is changing, and further change by 2050 is inevitable
- The long-term extent of future UK climate change depends on global GHG emissions
- Adaptation actions to build resilience are needed alongside actions to reduce emissions in order to tackle climate change
- Essex is and will experience a range of impacts
- Most local authorities have not grasped adaptation as fully as mitigation – scope to be a leader in this area
- What will the Commission's advice be? (for discussion)

# Global risk from climate change is higher than infectious diseases or fiscal crises



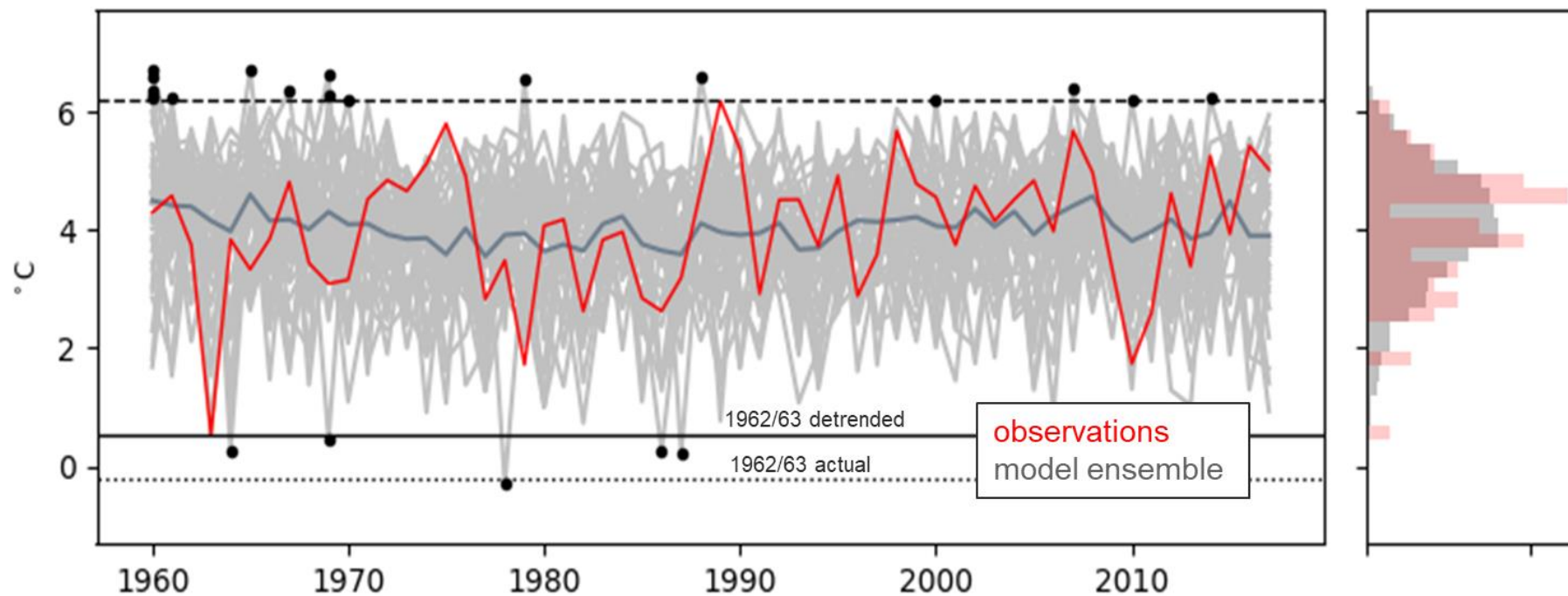
# The climate has already changed – temperature, sea level are rising

Variable	What has happened so far?
<b>Global average surface temperature</b>	Over 1°C above pre-industrial levels.
<b>UK annual average temperature</b>	About +1.2°C above pre-industrial levels. We have experienced a +0.8°C increase since 1961-1990.
<b>Global mean sea level rise</b>	~21 cm increase from 1900.
<b>UK mean sea level rise</b>	~16cm since 1900.
<b>UK heavy rainfall</b>	Some indications of increasing heavy rain but difficult to quantify.
<b>UK heatwaves – ‘like 2018 summer’</b>	Now a 10 – 25% chance each year, compared to <10% chance each year a few decades ago.



Results from the Met Office ‘UNSEEN’ project (left) calculating how much more likely a 2018 summer has become since 1960, and Christidis et al. (2020) showing trend in the warmest day since 1960

# Chance of very cold winters has dropped dramatically



- UNSEEN UK winter temperature variability using >2000 years of simulations.
- Probability of experiencing a 1962/63 cold winter is essentially zero.
- Chance of another 2009/10 cold winter is also very low (<3%).

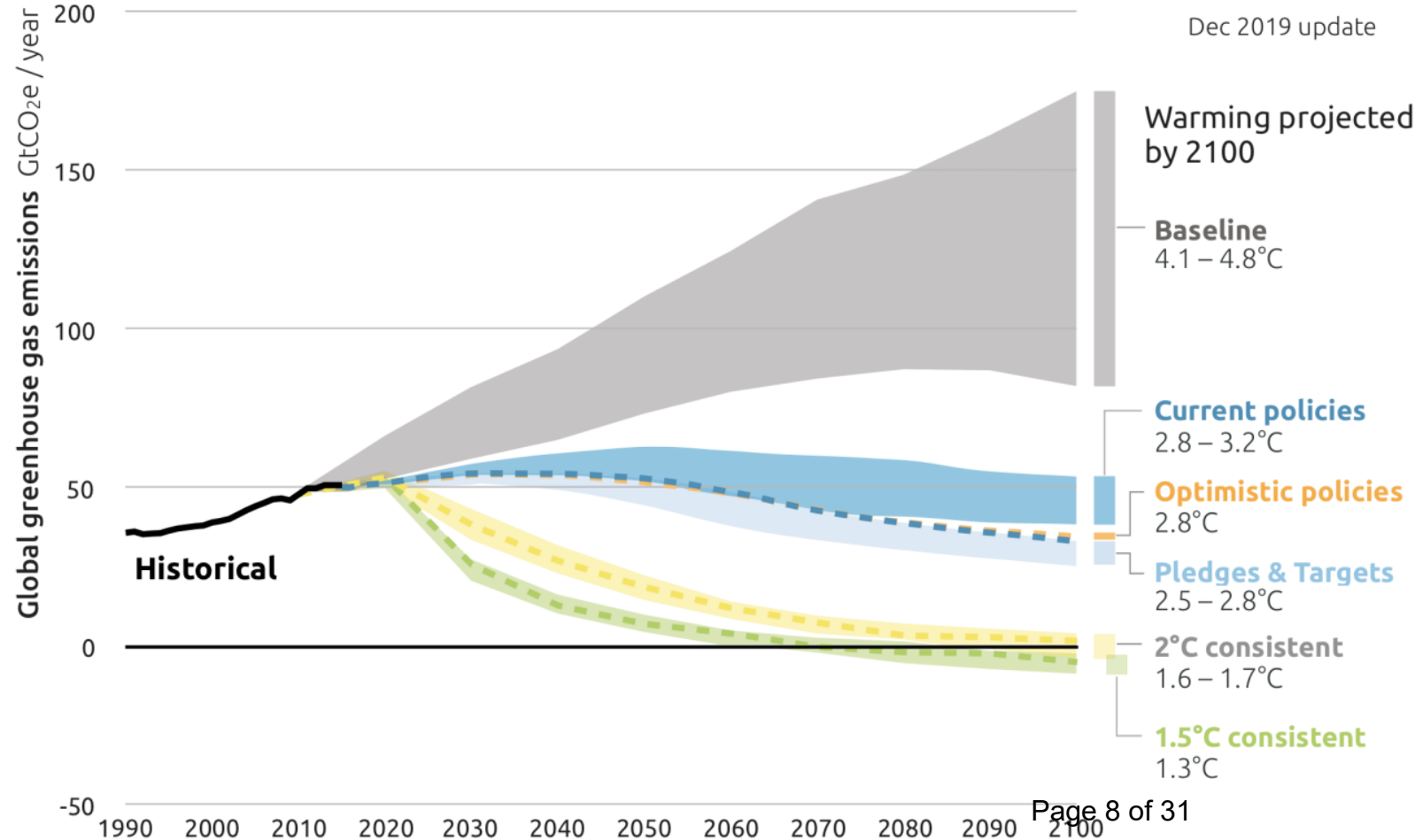
# Looking ahead - global emissions and policy pledges are heading the world for $\sim +3^{\circ}\text{C}$ currently

## 2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



Dec 2019 update

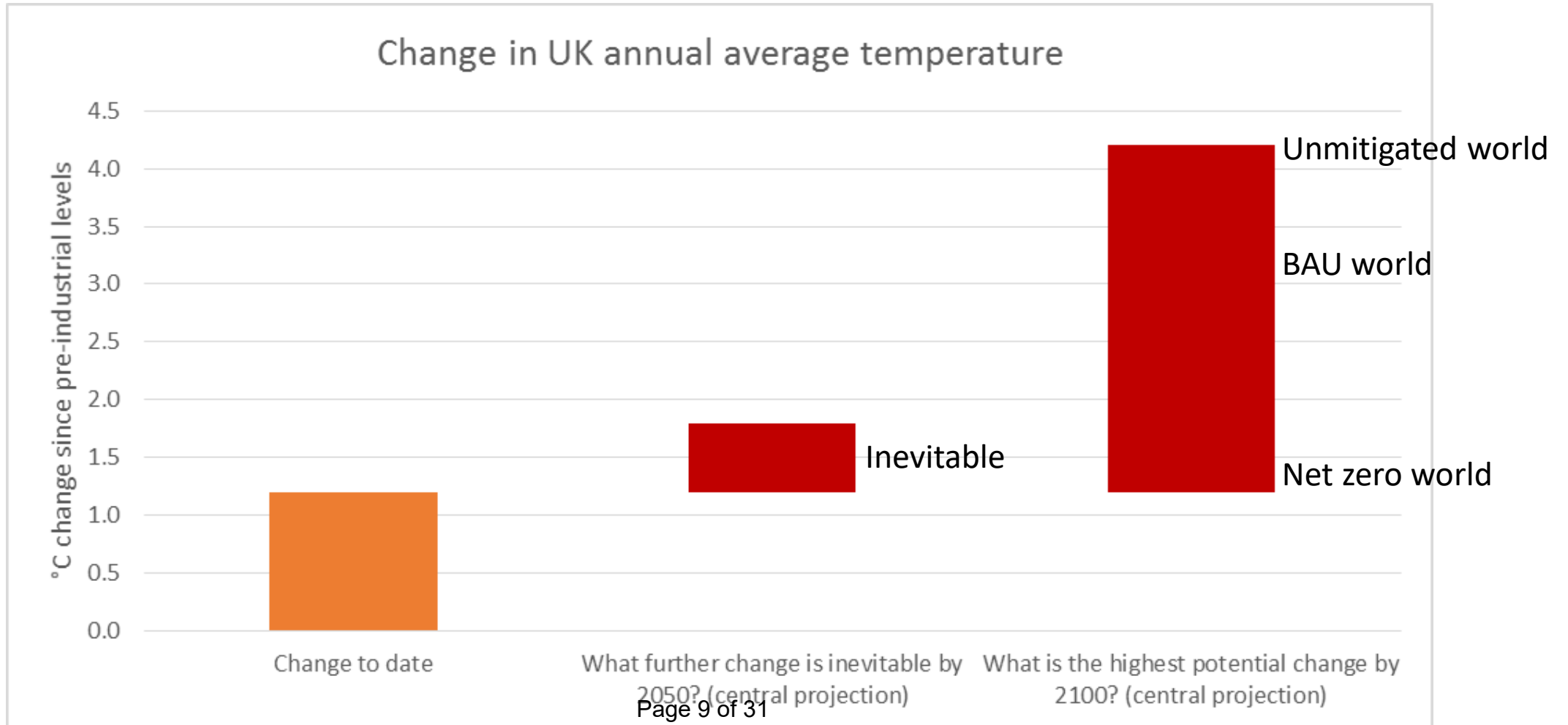


Greenhouse gas emissions need to reach net zero globally to stop global warming:

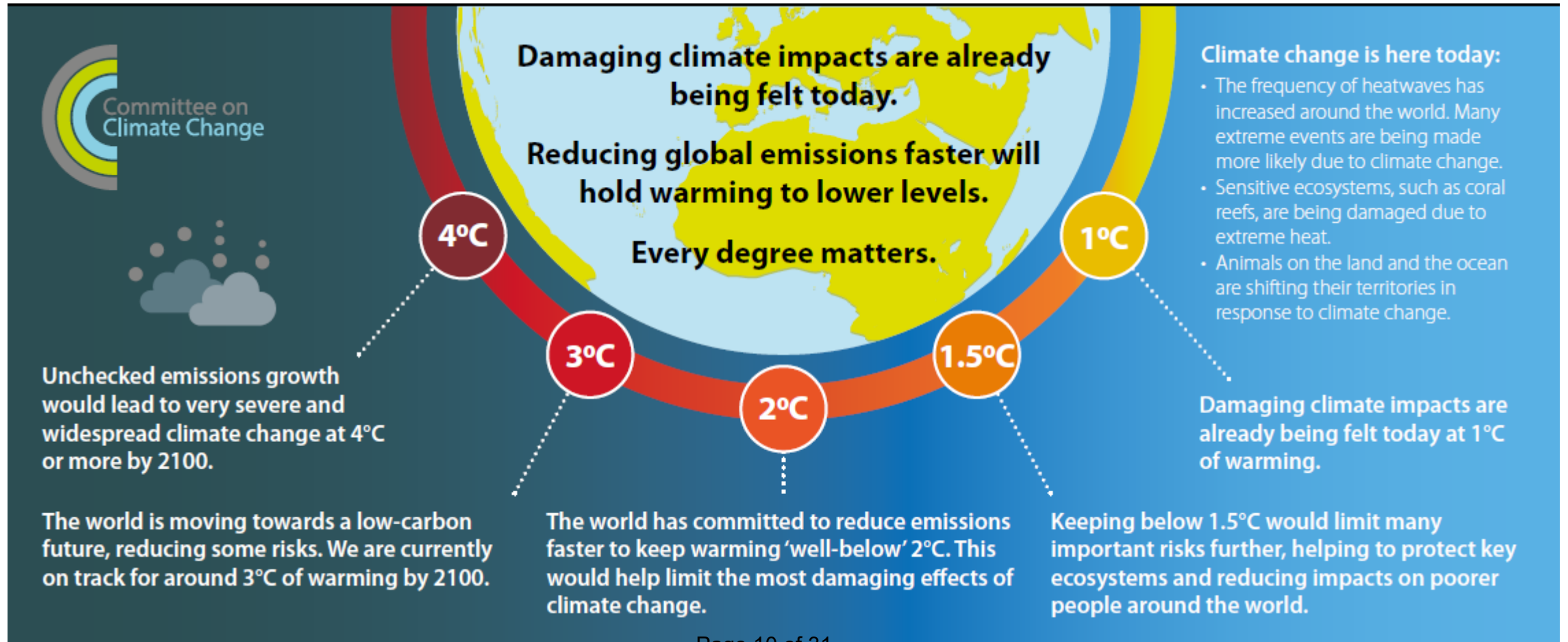
- Emissions will have declined in 2020 due to Covid, but these will still contribute to further climate change
- The future UK climate will be determined by global (not UK) emissions



# In the UK, further change is inevitable – at least another 0.5°C by 2050

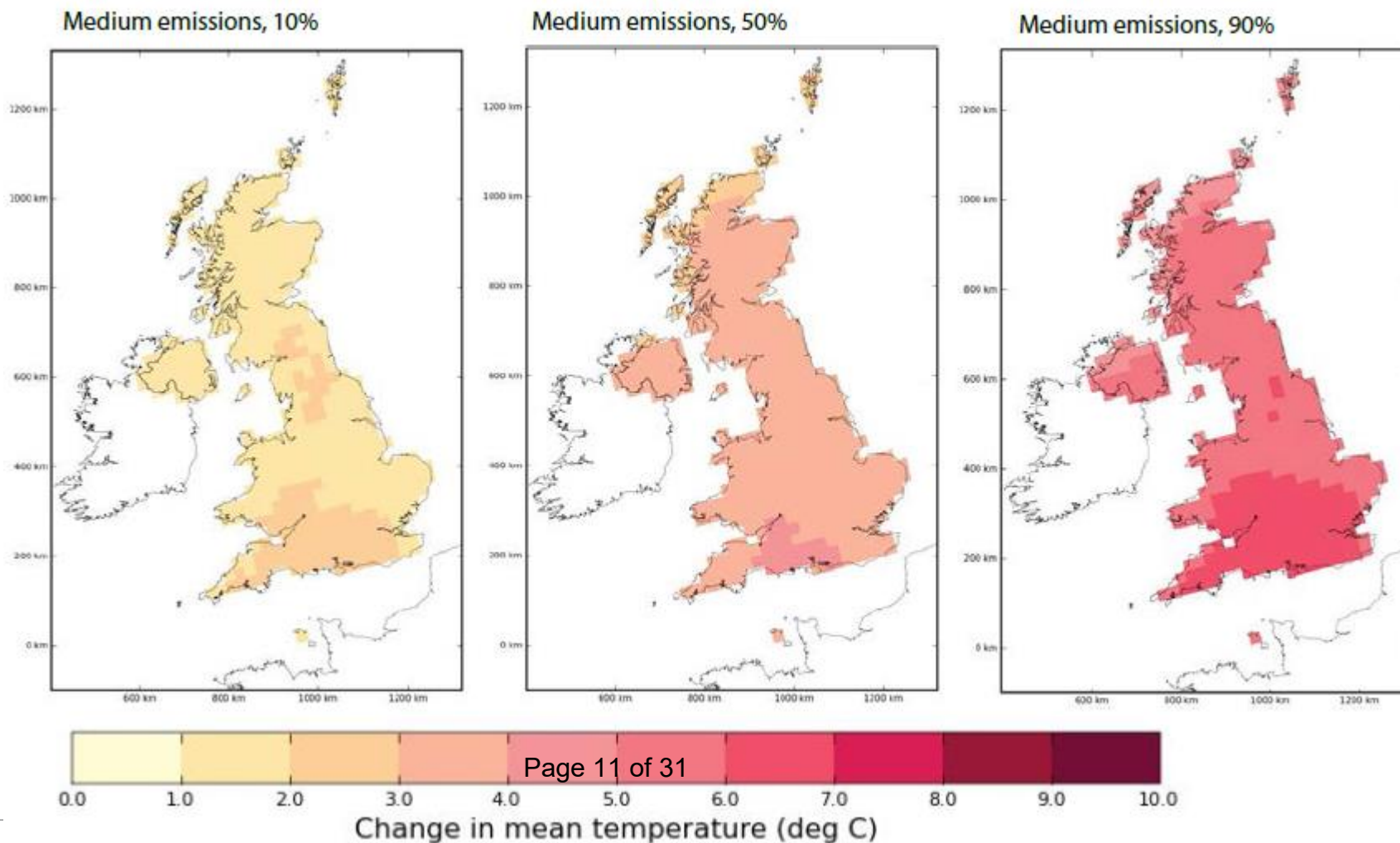


# This means we need to mitigate (reduce emissions) and adapt (build resilience to climate change impacts)

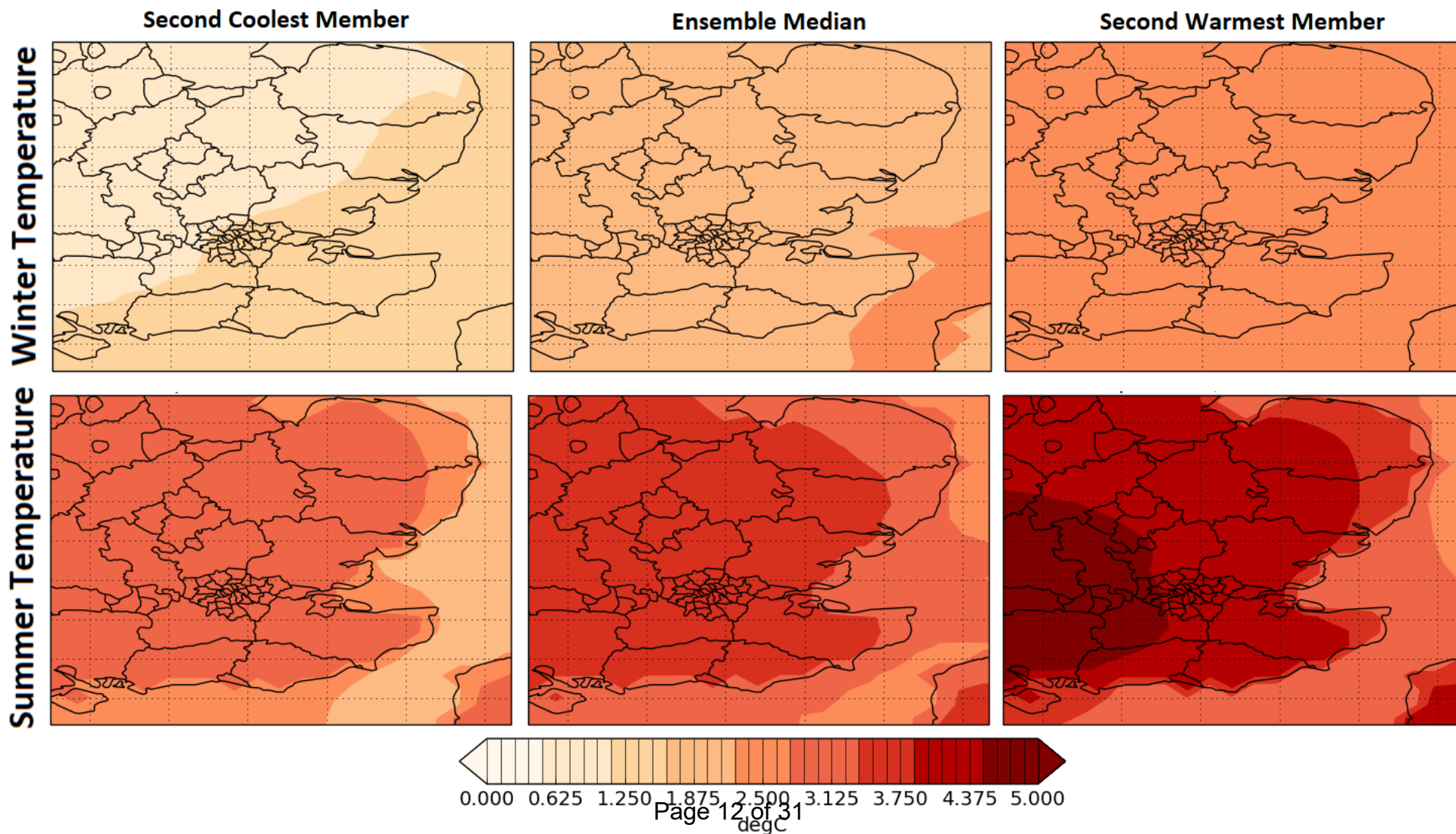


# Along with inevitability is uncertainty

Three scenarios for summer mean temperature for the period 2040 – 2069 are all under a medium (A1B) emissions scenario

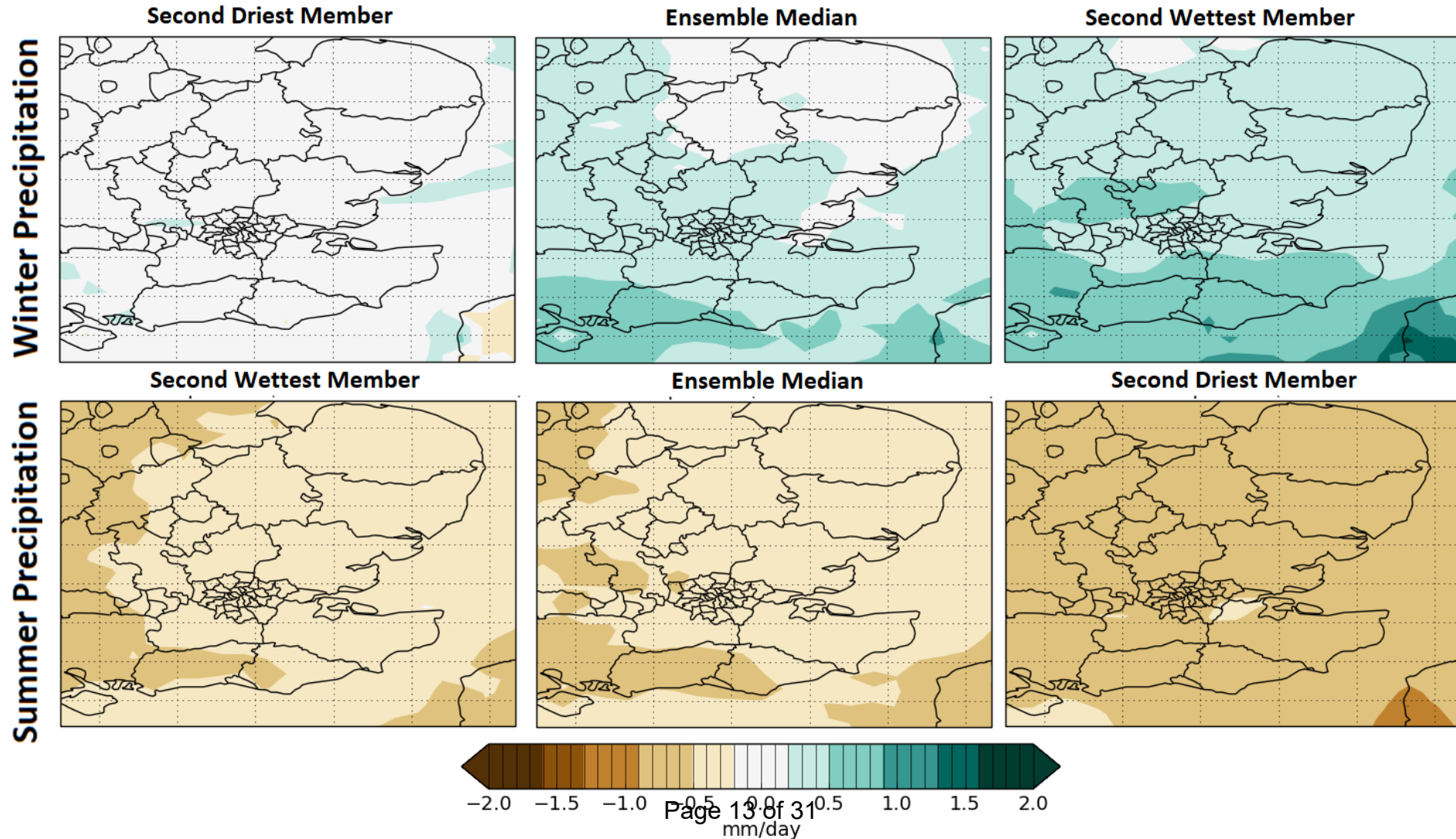


Change in mean seasonal temperature for the 2050s compared to 1981-2000 from UKCP Regional (12 km)

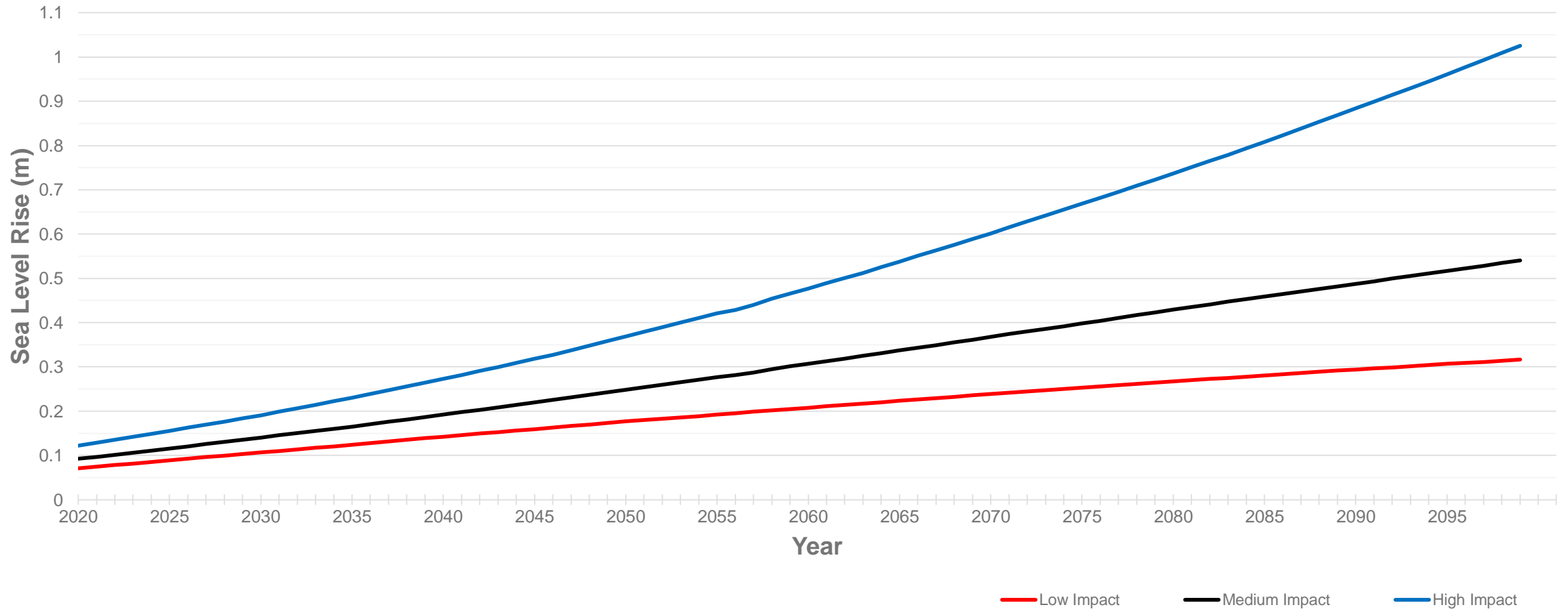




Change in mean seasonal precipitation for the 2050s compared to 1981-2000 from UKCP Regional (12 km)



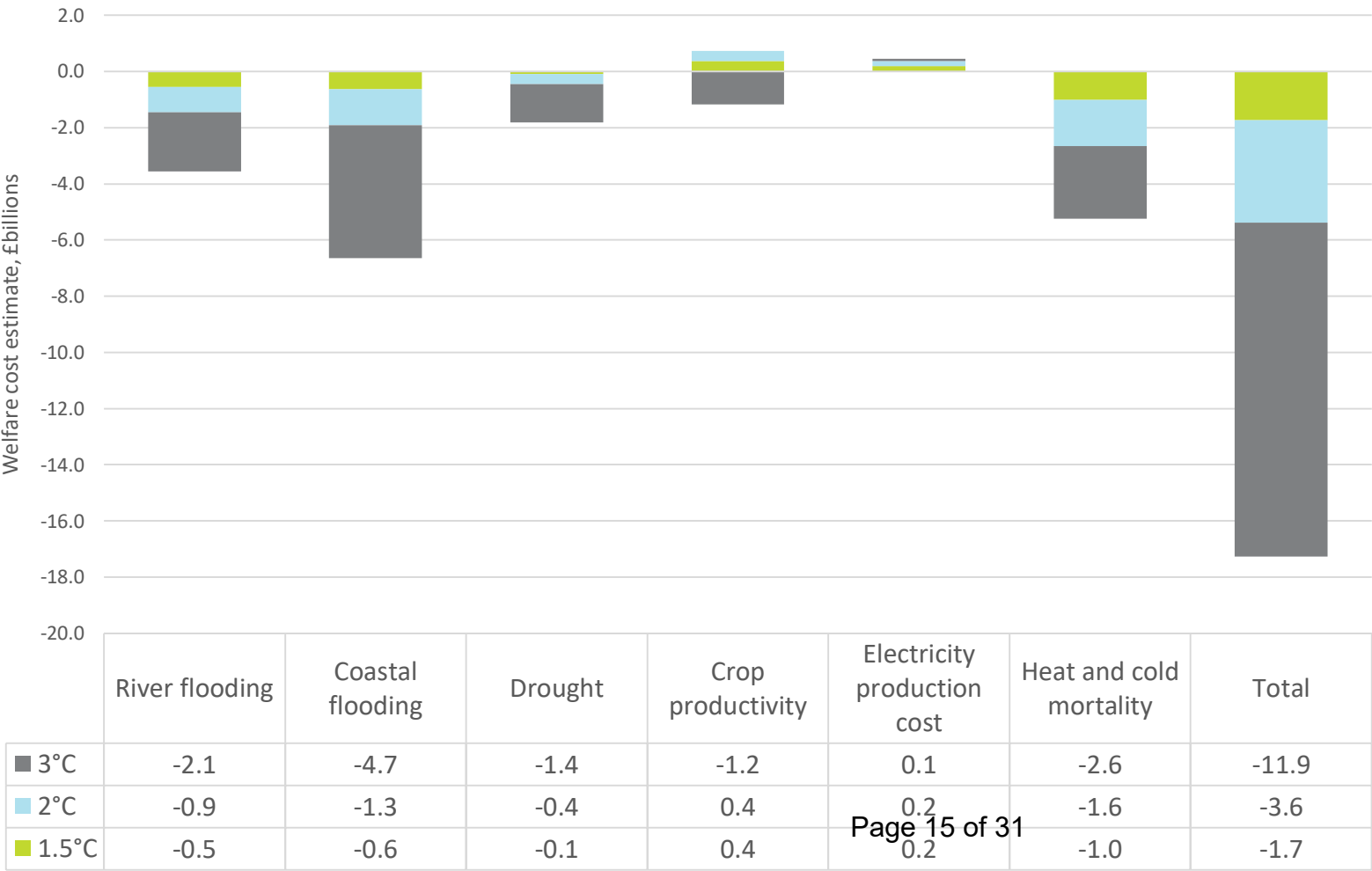
Change in Sea Level at the Sheerness Tide Gauge in 2020-2099 compared to 1981-2000 from UKCP Marine  
(closest tidal gauge, results will be similar across Essex)



2099 Sea Level Rise Values: 0.54 m (0.32 m to 1.03 m)

# Costs of inaction are high (but hard to estimate in full)

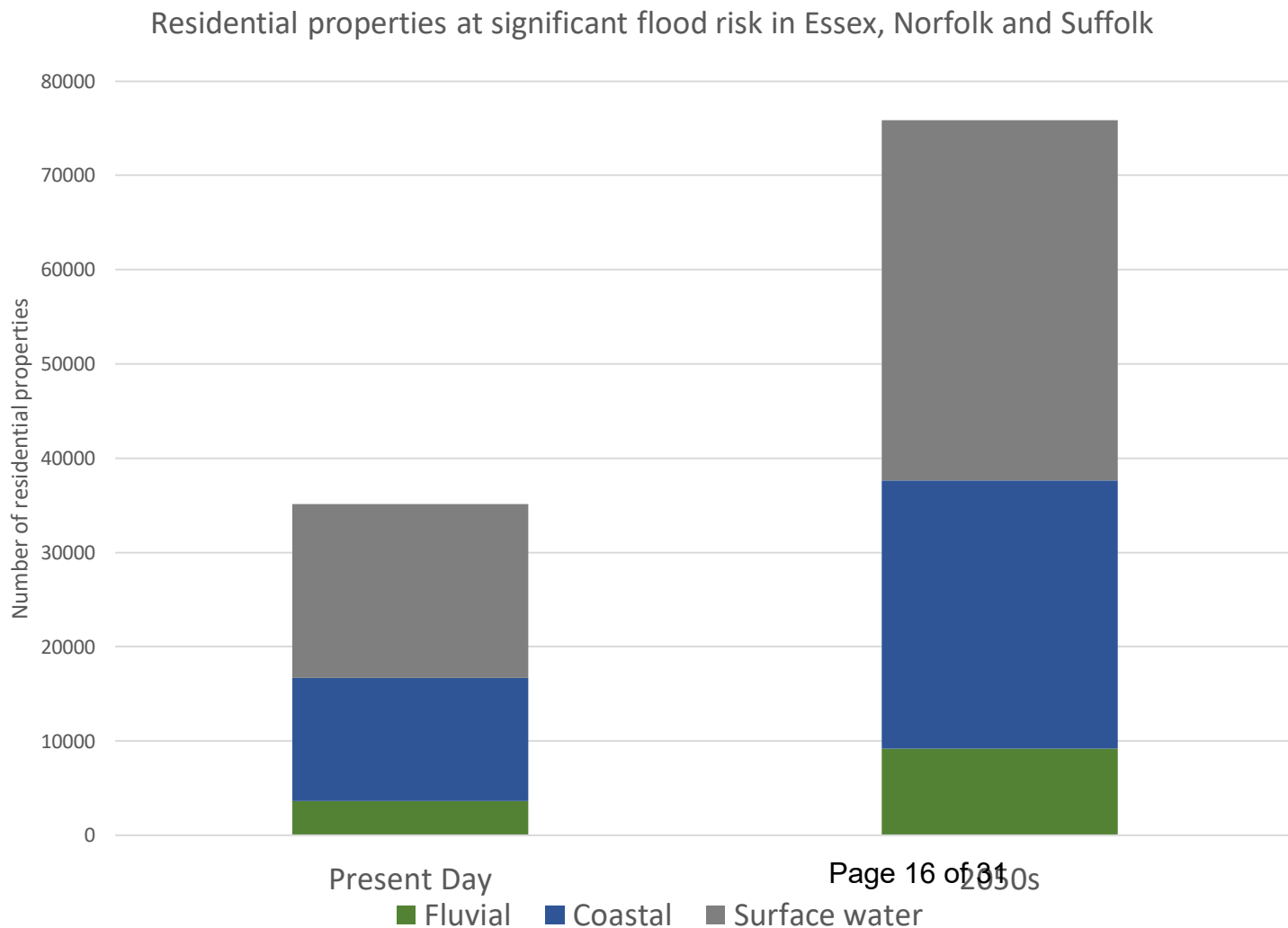
Welfare losses per year from climate impacts in £billions, UK and Ireland



Note:

- These estimates only include a selection of impacts (e.g. does not include surface water flooding, windstorms, impacts on the natural environment), so are not a national total loss estimate of climate change
- Analysis assumes that the economy is the same size and shape as today

# Future impacts – flood risk

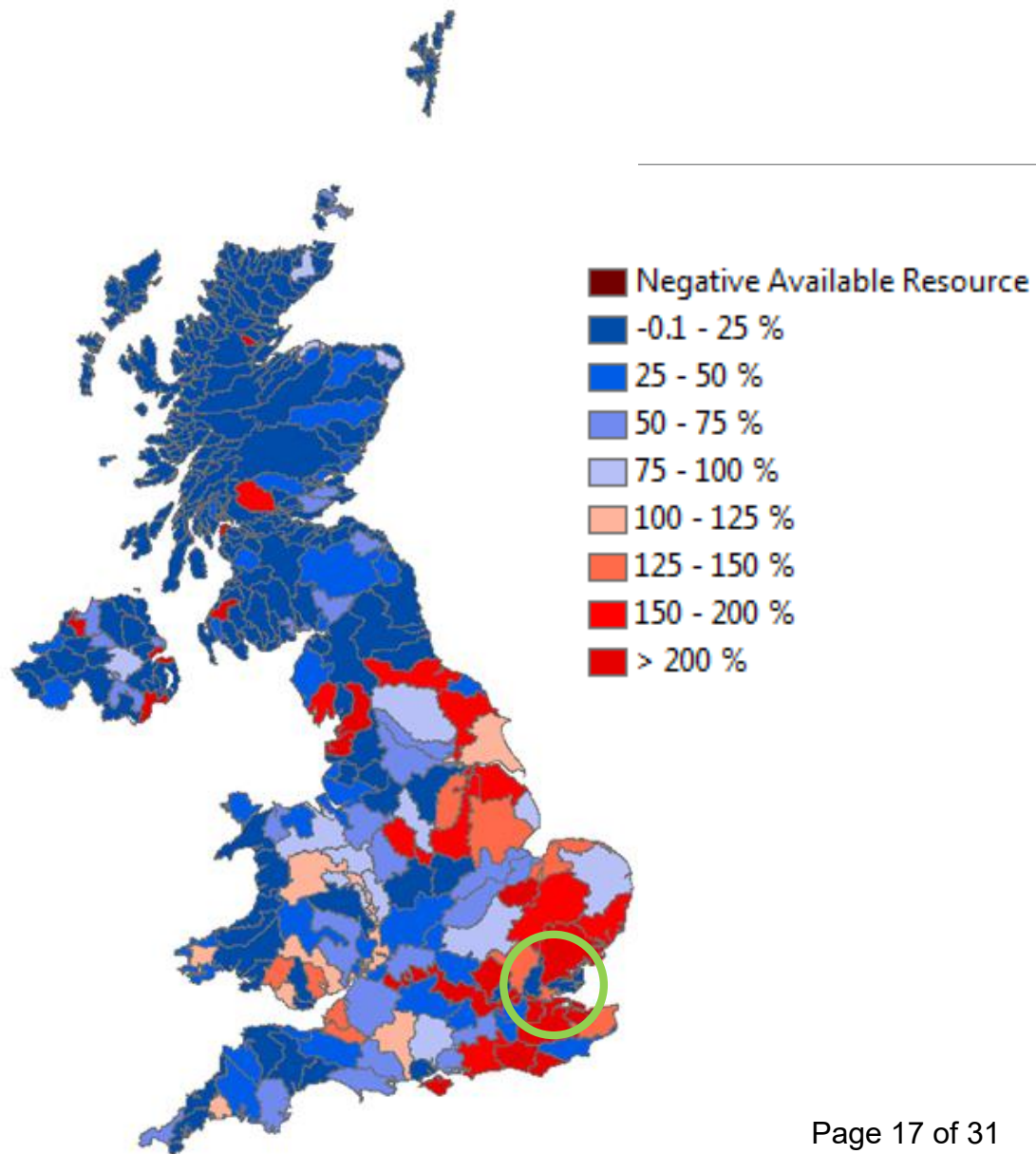


Essex has substantial issues with coastal and surface water flooding (blue and grey boxes)

Even over the next 30 years, the risk is projected to double without additional adaptation action



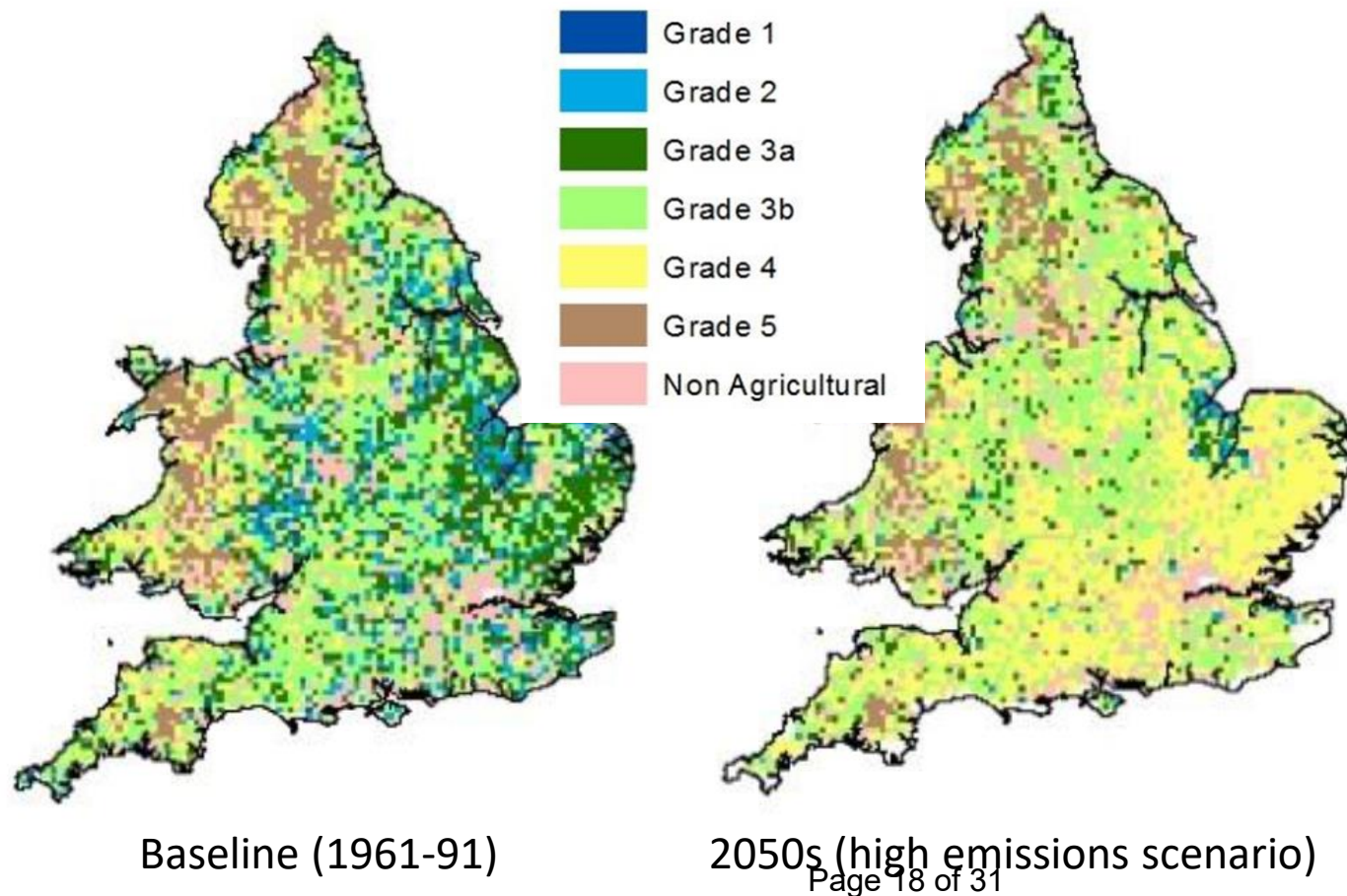
## Future impacts – water scarcity



UK map showing water demand as a % of water available for abstraction

Scenario - 2050s, high climate scenario, no assumed additional adaptation, natural environment requirements are assumed to be the same proportion of total water as they are now (i.e. proportional, not fixed demand)

## Agricultural land classification in England and Wales

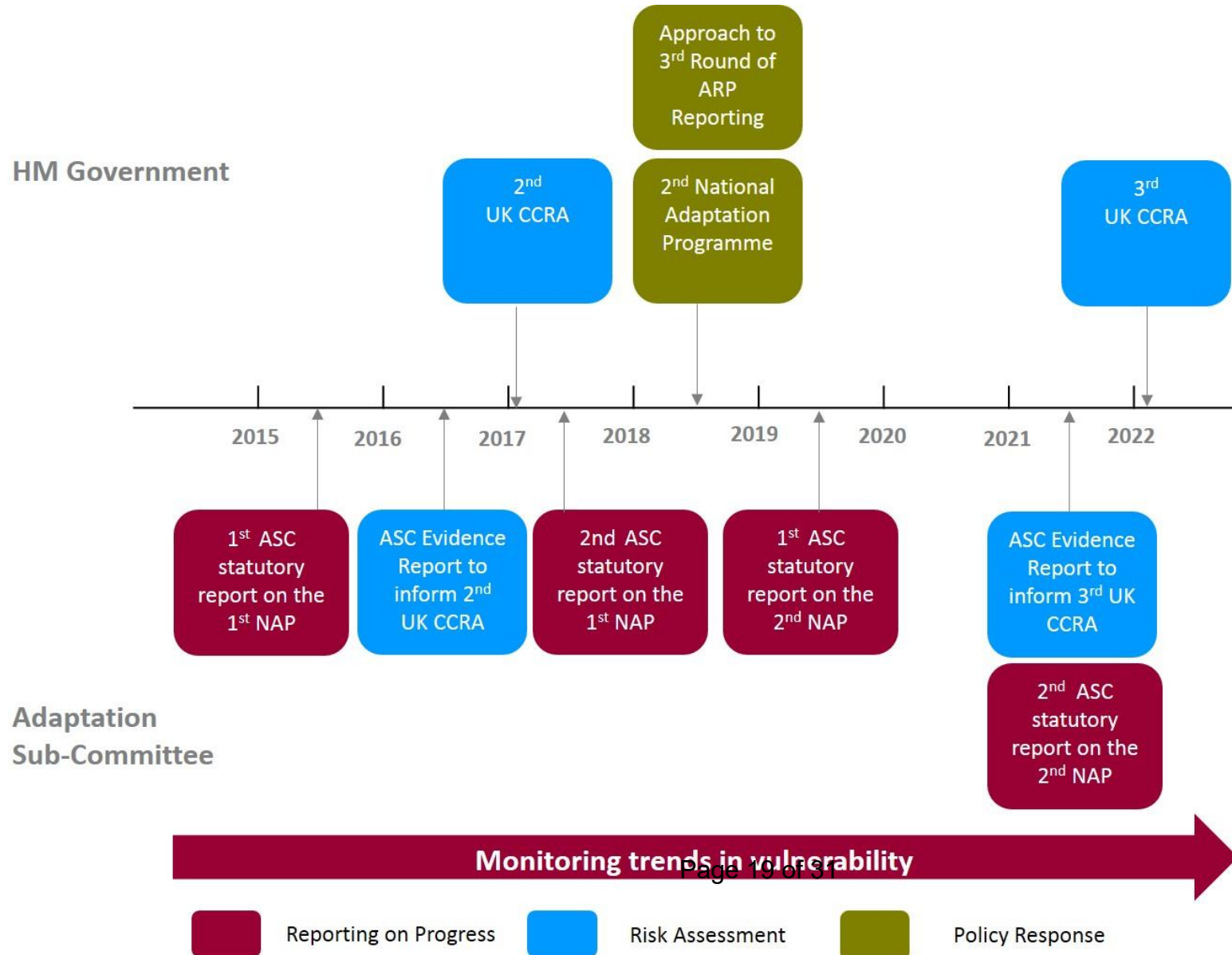


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Holme post – showing where the peat soil top layer used to be..

# The UK climate change adaptation policy cycle



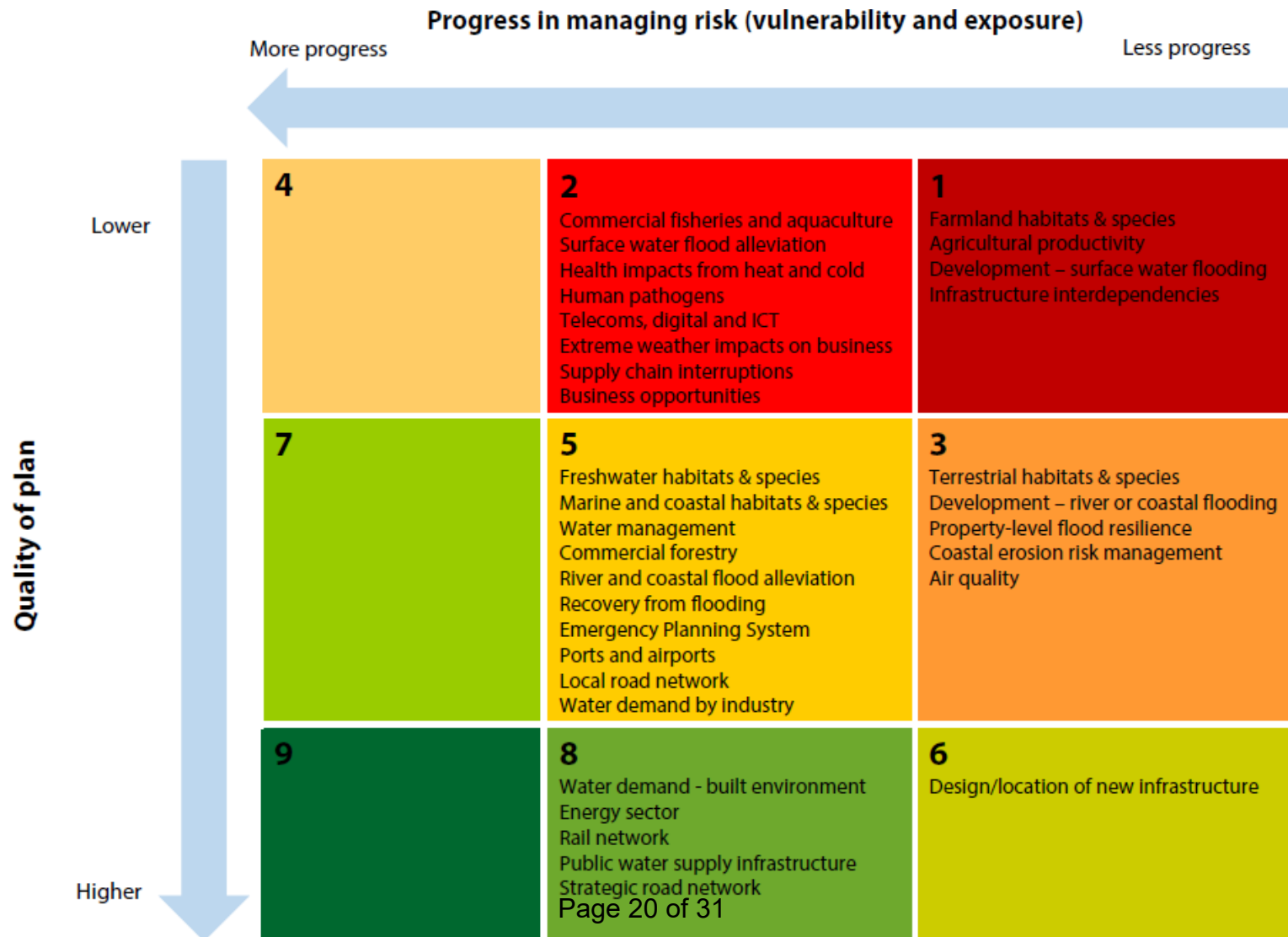
## The Climate Change Act puts in place statutory measures:

- UK climate change risk assessment CCRA, every five years
- National Adaptation Programme NAP, every five years

## The Adaptation Committee:

- Provides advice on the risk assessment (every five years)
- Scrutinises the National Adaptation Programme (every two years)

# Latest Adaptation Progress Assessment (England)



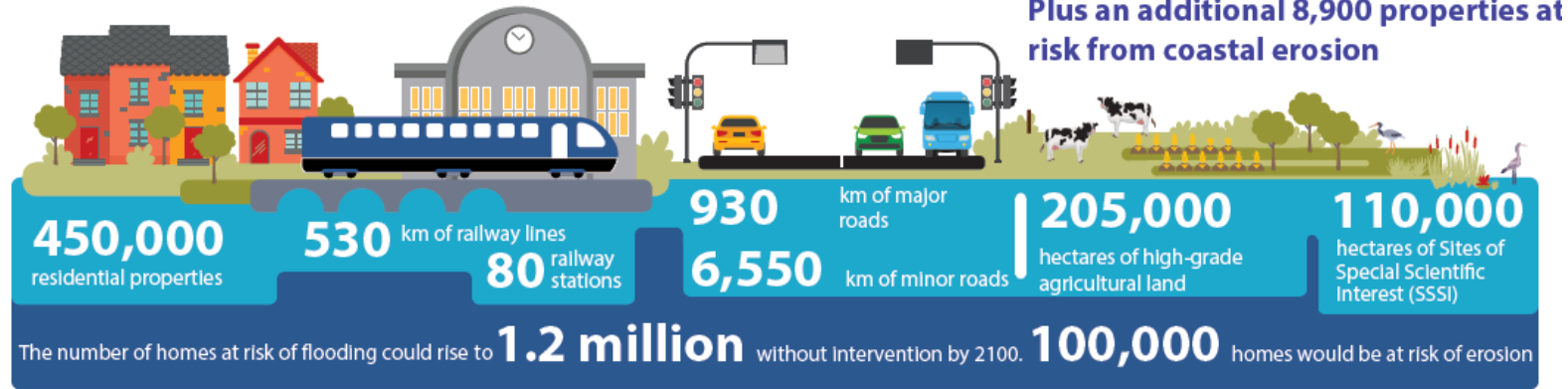


# CCC – Managing the coast in a changing climate (2018)

## What are the risks and impacts of coastal change in England?

An assessment of the risks and impacts of coastal flooding and erosion in England has been completed, focusing on advisory plans to manage these risks known as **Shoreline Management Plans (SMPs)**.

### What is at risk of coastal flooding now?



### How much do we need to invest to manage these risks up to 2105 in present value terms?

**£18 - 30 billion**

The cost of investments to implement Shoreline Management Plans to manage the risks of flooding and erosion.

**£49 billion**

The benefits of these investments in terms of avoided damages to properties.

**150km**

The length of the 5,000 km coastline within SMPs where intervention will not be cost-effective. **The benefits of hard defences are marginal for a third of the coast and are therefore unlikely to be funded.**

For some investments, such as retreating or realigning the coast, this assessment excludes potential long-term environmental benefits of new habitats, which would strengthen the case for action.

### What could we be doing now to improve our resilience against coastal change?



Restore natural environments to improve natural flood protection



Increase protection at key locations



Raise awareness and discuss the issues to think of solutions together



Better planning to look at flexible adaptation solutions

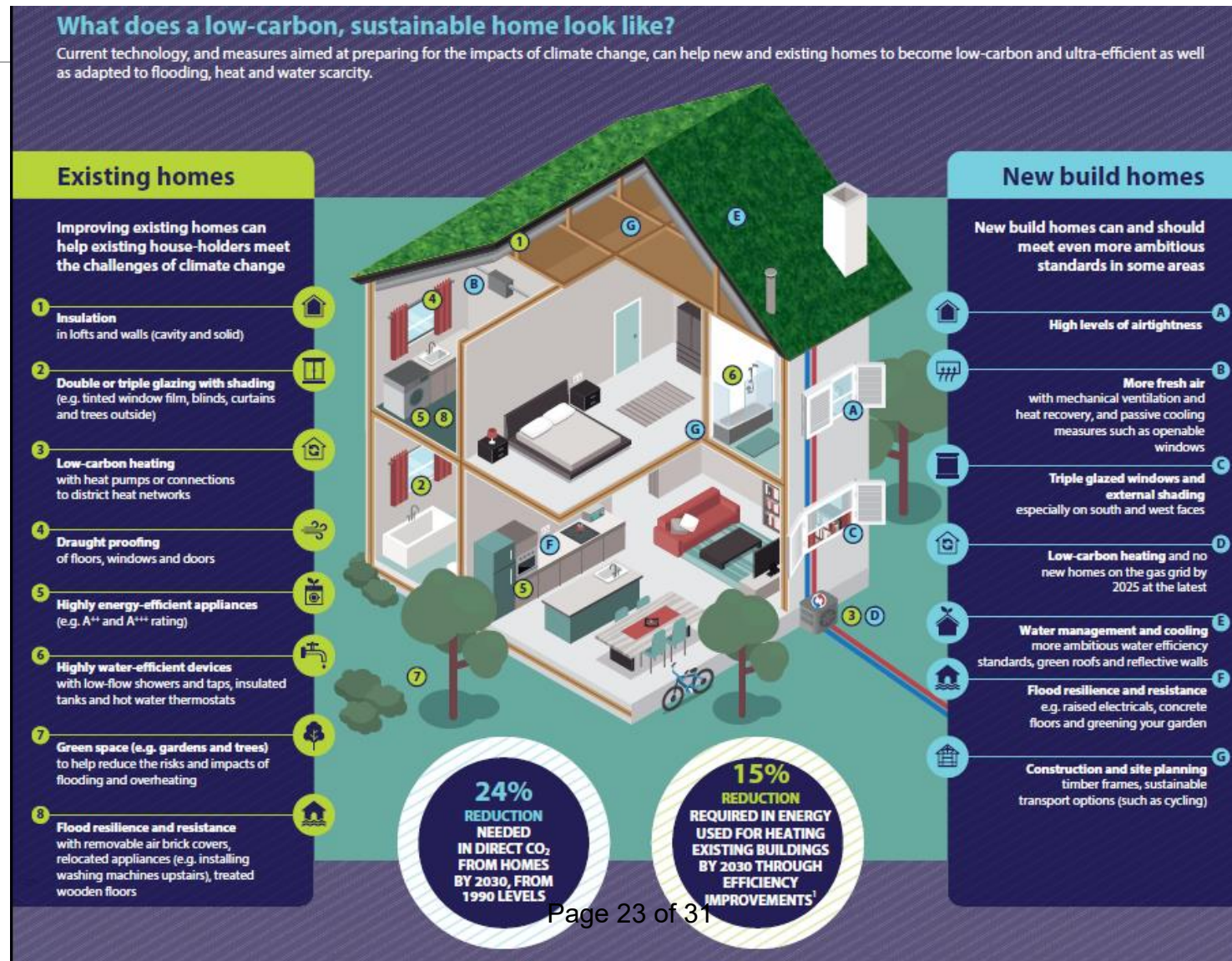


For more information, please see [www.theccc.org.uk/publications/](http://www.theccc.org.uk/publications/)

## CCC recommendations – coastal change

- Scale and implications of future coastal change should be acknowledged by those with responsibility for the coast and communicated to people who live on the coast
- Local government and the Environment Agency need to be enabled by national government to deliver a long-term and appropriately resourced approach to engaging affected communities and stakeholders
- Policy on the management of coastal flooding and erosion risk should specify long-term, evidence-based, quantified outcomes that have the buy-in of the affected communities and stakeholders
- Plans to manage and adapt specific shorelines over the coming century should be realistic and sustainable in economic, social and environmental terms.

# CCC – UK Housing – Fit for the Future? (2019)



# CCC recommendations – housing and urban areas

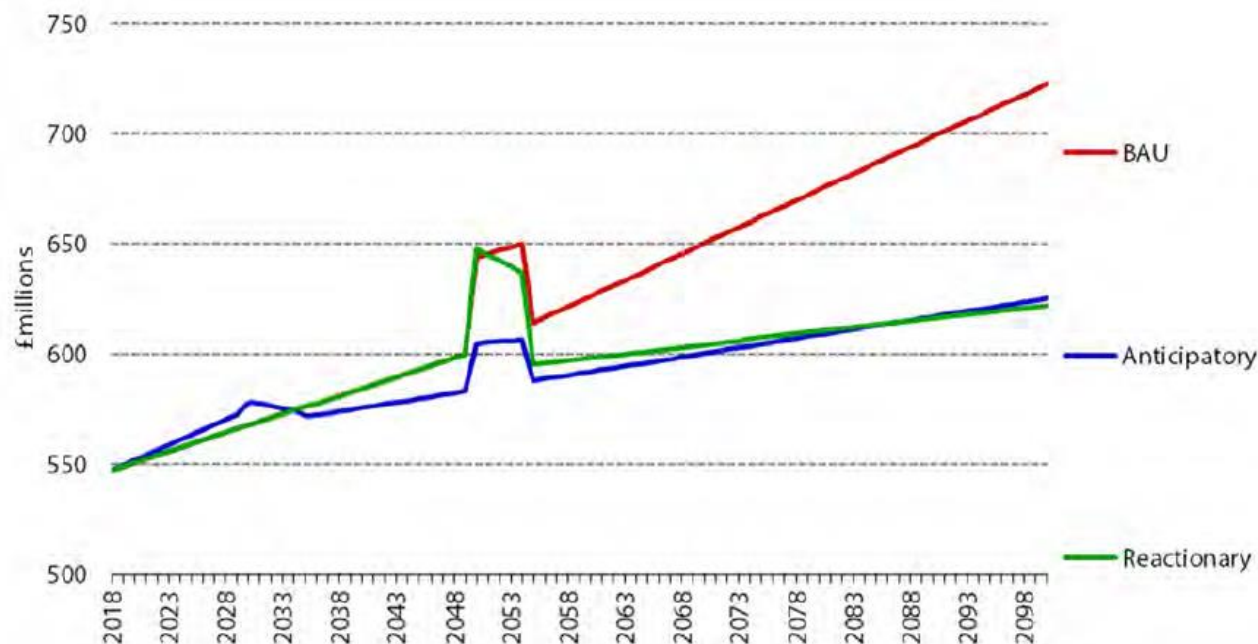
- Set goals for reversing the national decline in urban greenspace
  - Greenspace 'retrofit' programmes should be included in local plans.
  - Incorporate national green infrastructure from the 25 Year Environment Plan into local planning
- Include water efficiency measures in energy efficiency retrofit programmes
- Overheating risk needs integrating into local plans (we have already made extensive recommendations to MHCLG on the need to amend building regulations). Plans are also needed for care homes, hospitals, schools, prisons.
- Stronger policy on sustainable urban drainage to ensure it is included as the default for new developments
  - Make green SuDS the default in all new developments (buildings and infrastructure) – this is set out in the NPPF but needs implementation
  - Automatic right to connect new developments to the sewer system should be made conditional on national SuDS standard being met
  - Clarify arrangements for who is adopting and maintaining SuDS

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# CCC – Land use; reducing emissions and preparing for climate change (2019)

**Figure 3.7.** Norfolk and Suffolk broads case study: Long-term pattern of costs (£m) under different adaptation scenarios



**Source:** JBA Consulting (2018) for the CCC

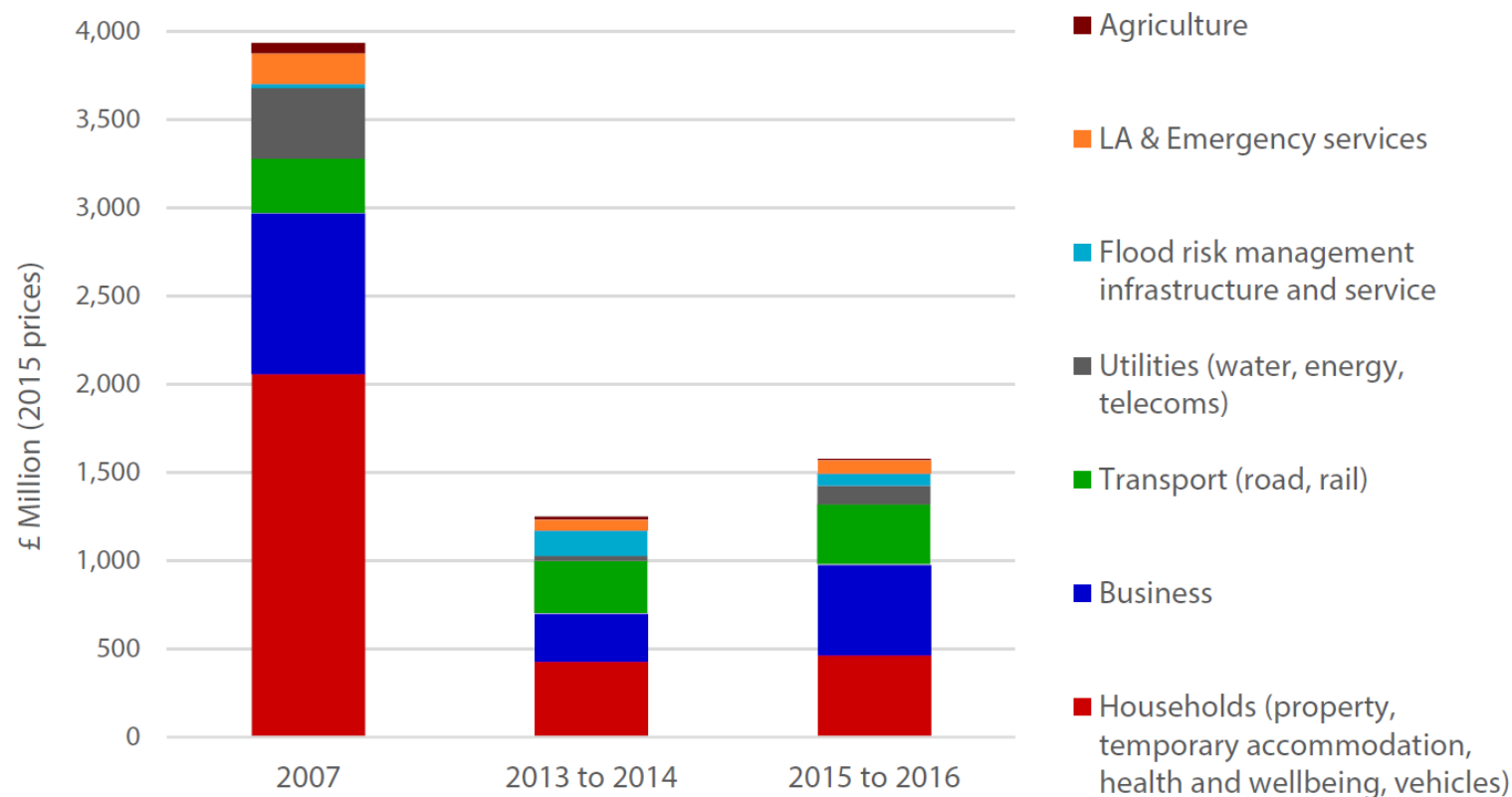
**Notes:** The jump in costs seen in 2050 relates to the recovery costs after the flooding event, plus an increase in short-term maintenance costs and expenditure to maintain production. Due to some degree of switching to more resilient land uses (arable to pastoral and saltmarsh), the costs during this period are lower under the anticipatory scenario than for the reactionary or BAU scenarios, but some impacts still occur due to negative impacts on the remaining arable land in particular. See the supporting research for more details. Values are quoted in nominal terms.

- Anticipatory adaptation to change land use has much lower long-term damage costs
- CCC land use report (2019) considered this for four case study areas, including switching arable to saltmarsh/ pastoral in the Norfolk Broads. Not quite Essex, but the general pattern of costs and benefits likely to be the same!

- Ensure that adaptation (and mitigation) are integrated into the Environmental Land Management system (letter to Defra from the CCC [here](#)).
- Diversifying land use is likely to build in resilience. Diversifying agricultural land, afforestation, peatland restoration and catchment management have positive impacts on the condition of natural habitats, and habitat creation.
- Resources are needed that explain local climate impacts and risks to land managers – e.g. regional risk assessments
- Support should be provided to help land managers transition to alternative land uses. This includes help with skills, training and information to implement new uses of land, and support with high up-front costs and long-term pay-backs of investing in alternative uses.

# Assessing risks (and opportunities) to businesses

**Figure 5.1.** Estimates of the economic impact of major floods

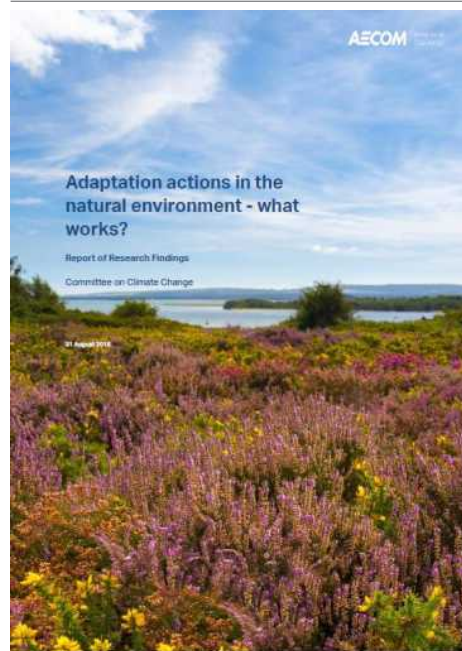


**Source:** Environment Agency (2018) *Estimating the costs of the 2015 to 2016 winter floods*.

- Government should re-establish a support service on adaptation for businesses (could Essex do something here too? There is no sign of this happening at national level)
- Encourage large businesses to disclose physical risks, using frameworks such as the Taskforce on Climate-related Financial Disclosure, or the Adaptation Reporting Power



# Good adaptation leads to better places to live for people and wildlife





# Adaptation in Essex – great examples that need scaling up



Kingsmoor Flood Alleviation Scheme (Leaky Dams)



Abbotts Hall Farm Saltmarsh



Basildon Hospital Rain Gardens

