

UKCP18

National Climate

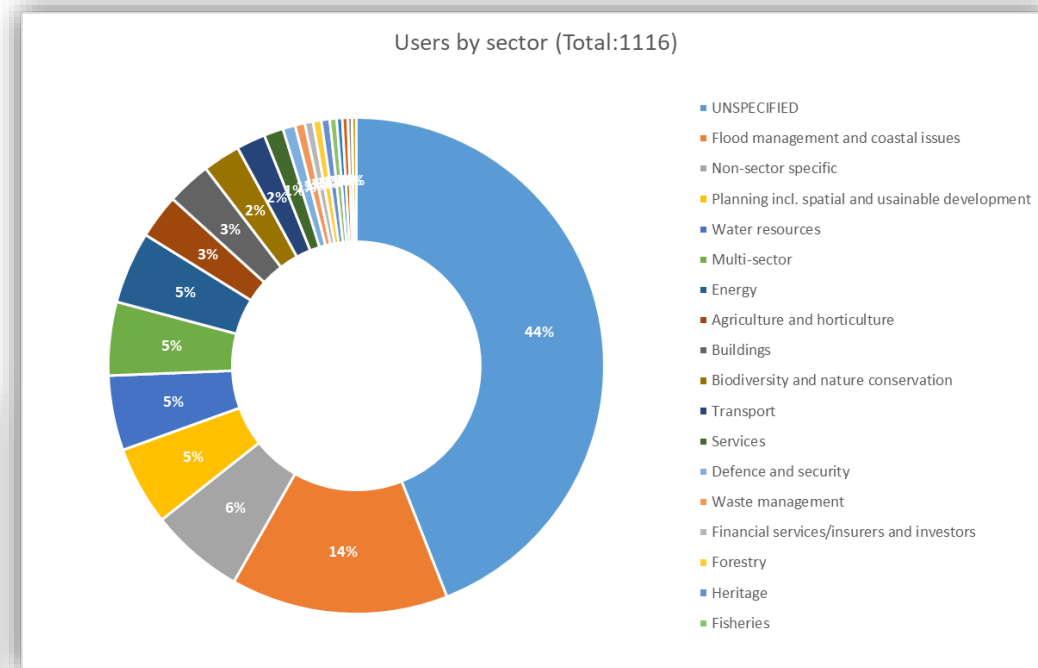
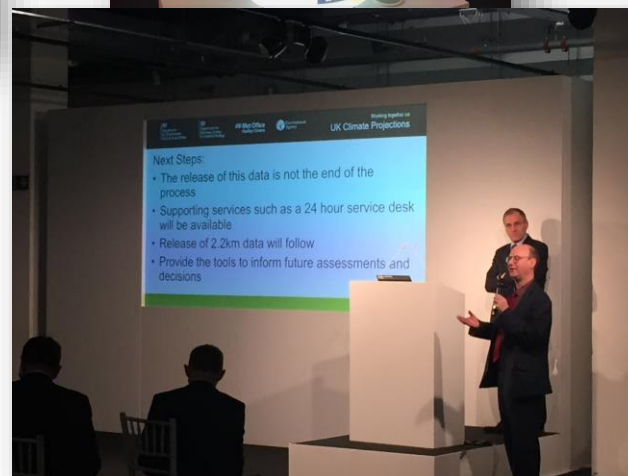
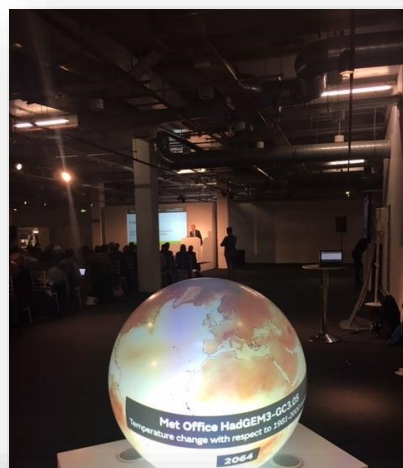
Projections

Professor Jason A. Lowe

With James Murphy, David Sexton, Lizzie Kendon, Fai Fung, Glen Harris and many others

January 2019

Launch Events – 26 November 2018



User statistics

Media coverage

The Daily Telegraph
26/11/2018

Heatwaves may become the norm within half a century

Gove spells out climate strategy as 5C temperature increase is forecast

By Christopher Hope

from sea level rise and make

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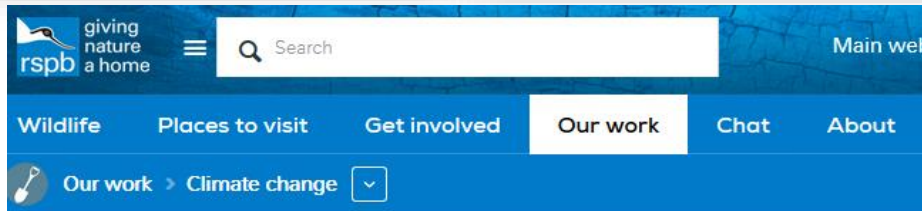
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Climate change

Global temperature rises could be double those predicted by climate modelling

Researchers say sea levels could also rise by six metres or more even if 2 degree target of Paris accord met



Nature - at the heart of climate change action?

The UKCP18 climate change projections are a new spur to putting adaptation into practice. We should use them widely, across everything we all do, if we want our work today to last into tomorrow's future. And greater emphasis on five yearly cycle of impacts and adaptation plans required by the Climate Change Act can help drive this.



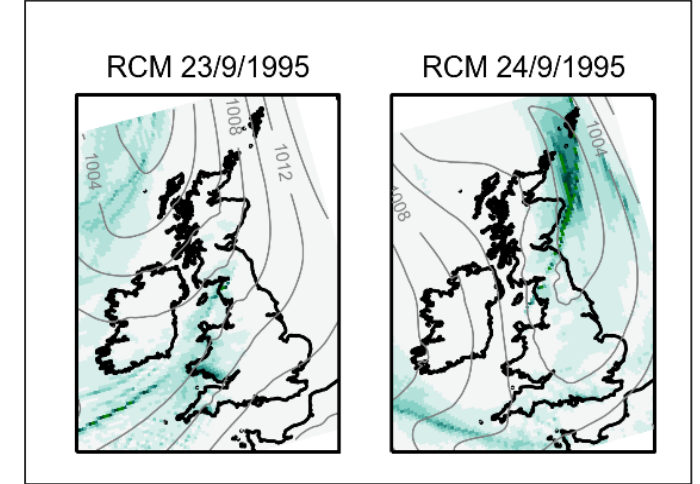
Philosophy of UKCP18



The best new science



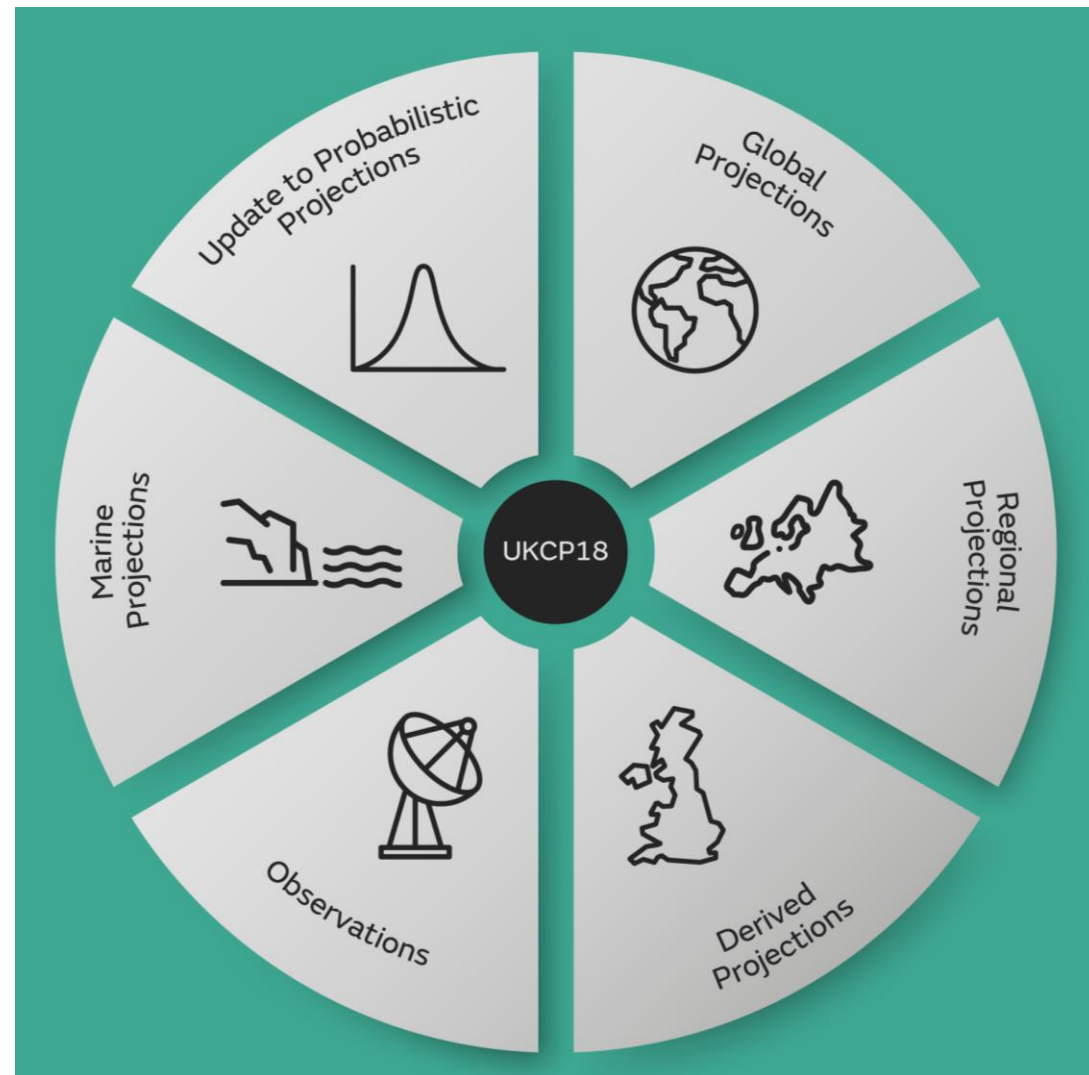
Developed with users



From climate trends
to future weather

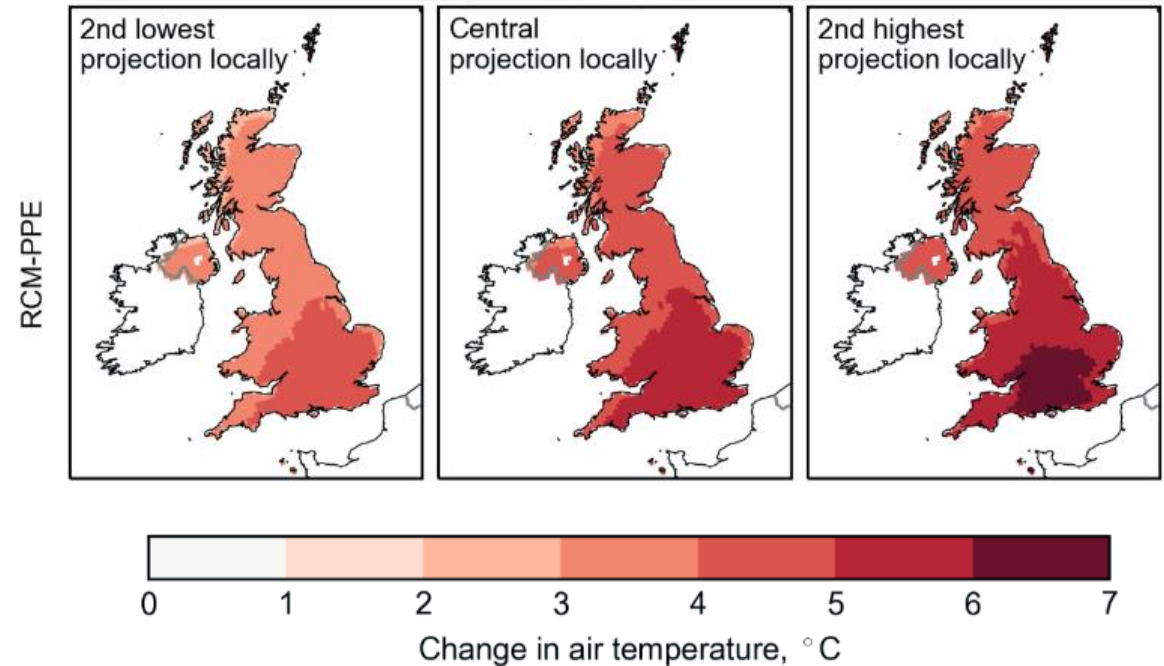
Headline result:

“a greater chance of
warmer, wetter winters and
hotter, drier summers”

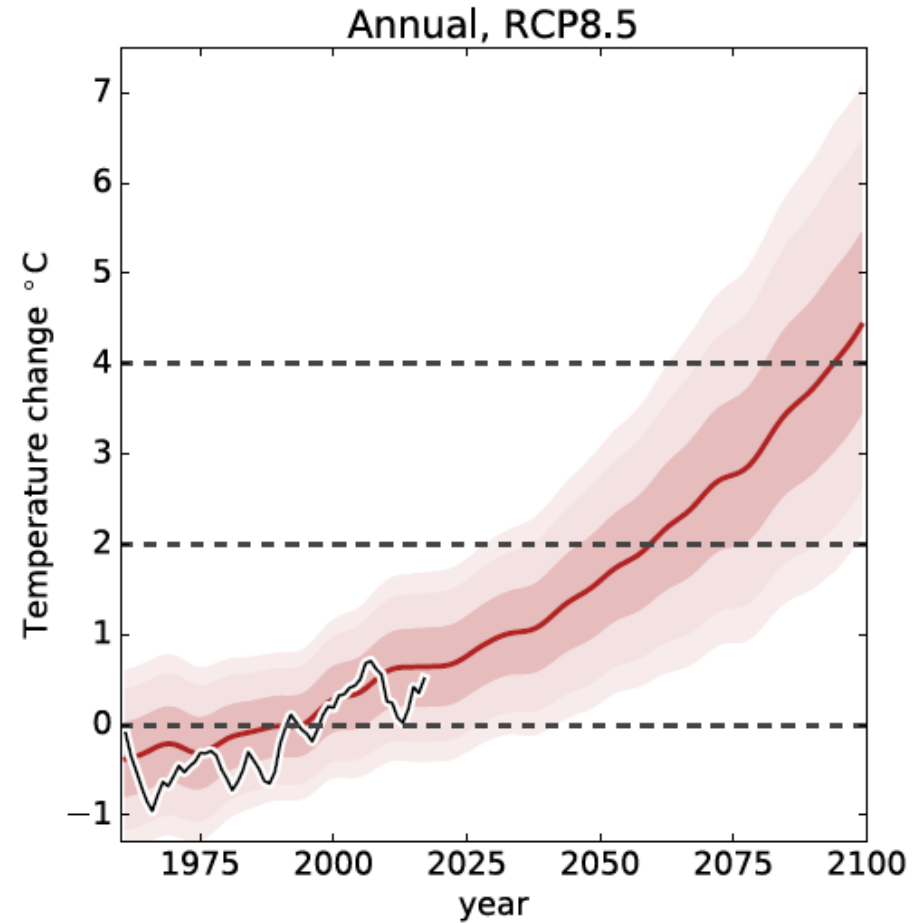
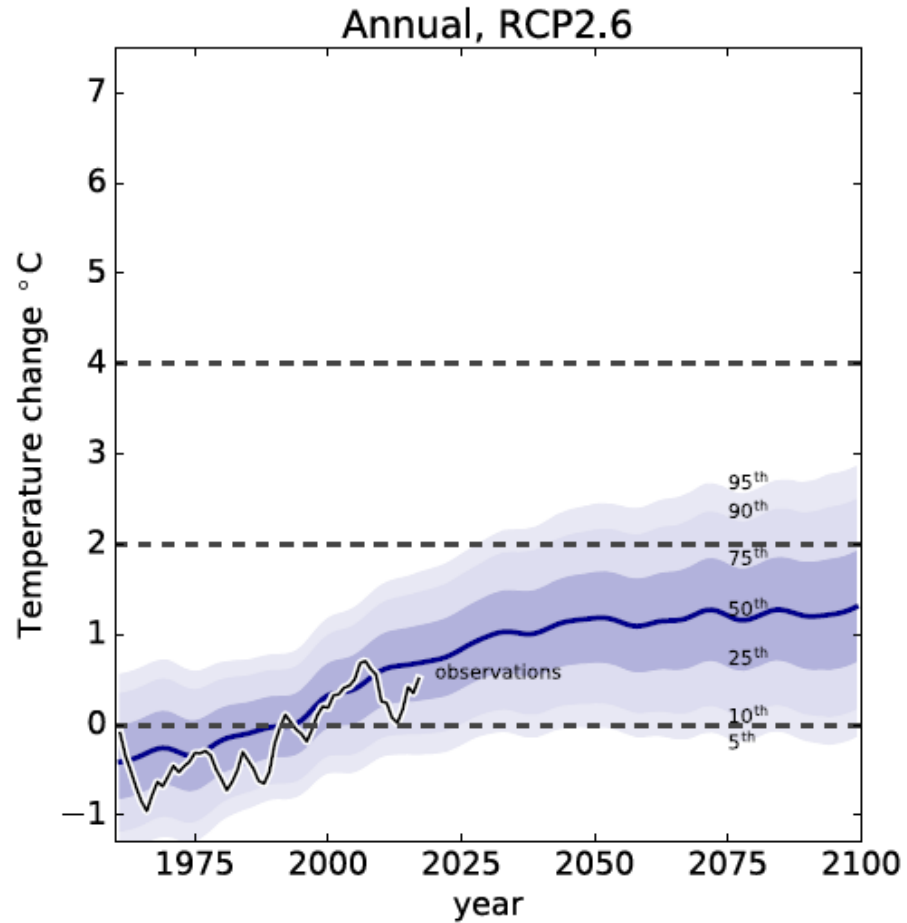


Future UK temperatures

- All areas of the UK are projected to experience warming
- Warming is greater in the summer than the winter
- Future rise depends on the amount of greenhouse gases the world emits
- The lowest scenario is compatible with aims to limit global warming since pre-industrial levels to below 2°C
- The highest scenario will likely require significant further adaptation



Future UK temperatures



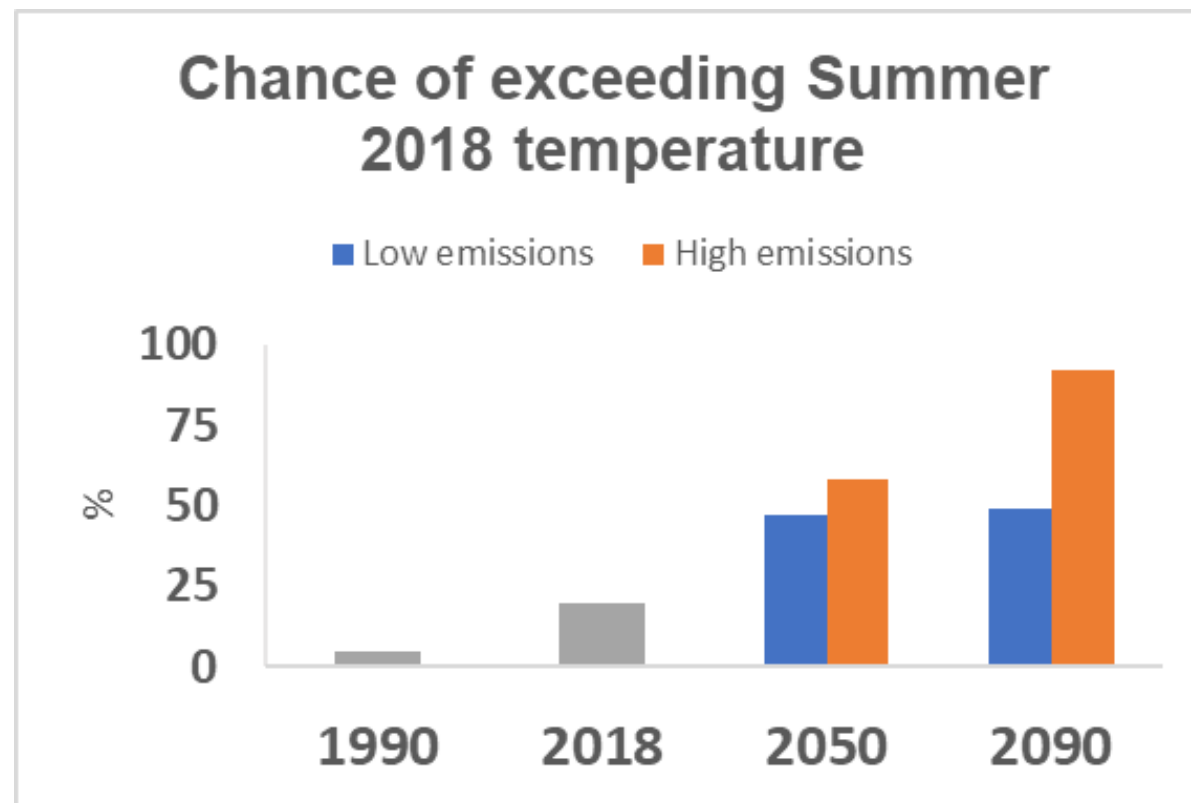
In RCP2.6 fastest rate of change in near future

In RCP8.5 fastest rate of change at end of century

Similarity between scenarios over next couple of decades

Summer 2018 heatwave

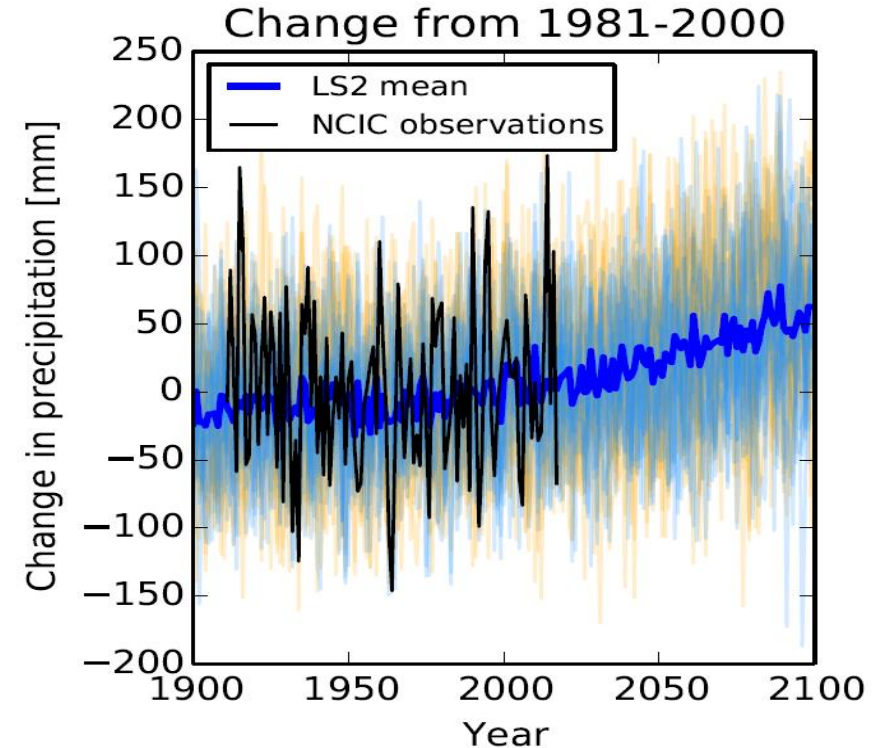
- Chance of such hot summers low in the baseline period (<10%)
- By mid-century the chance of hot summers will be of the order of 50%
- Beyond 2050 the chance of a warmer summer more strongly depends on emission scenario



Future UK precipitation

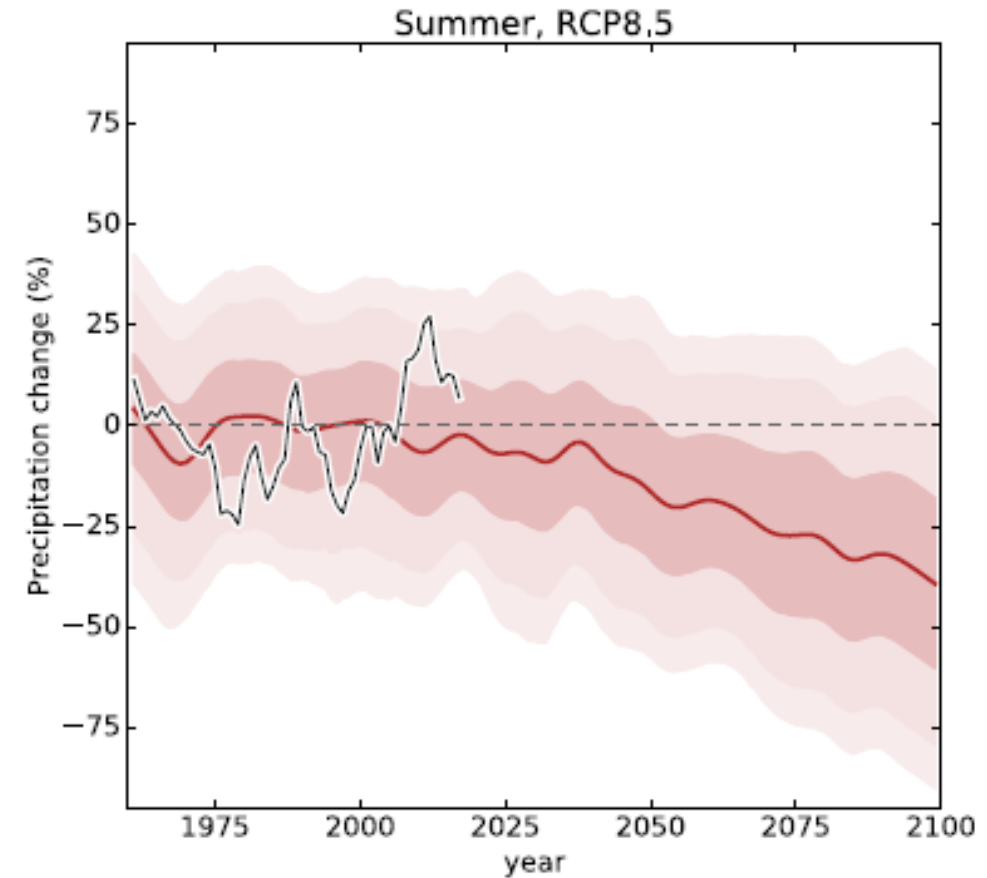
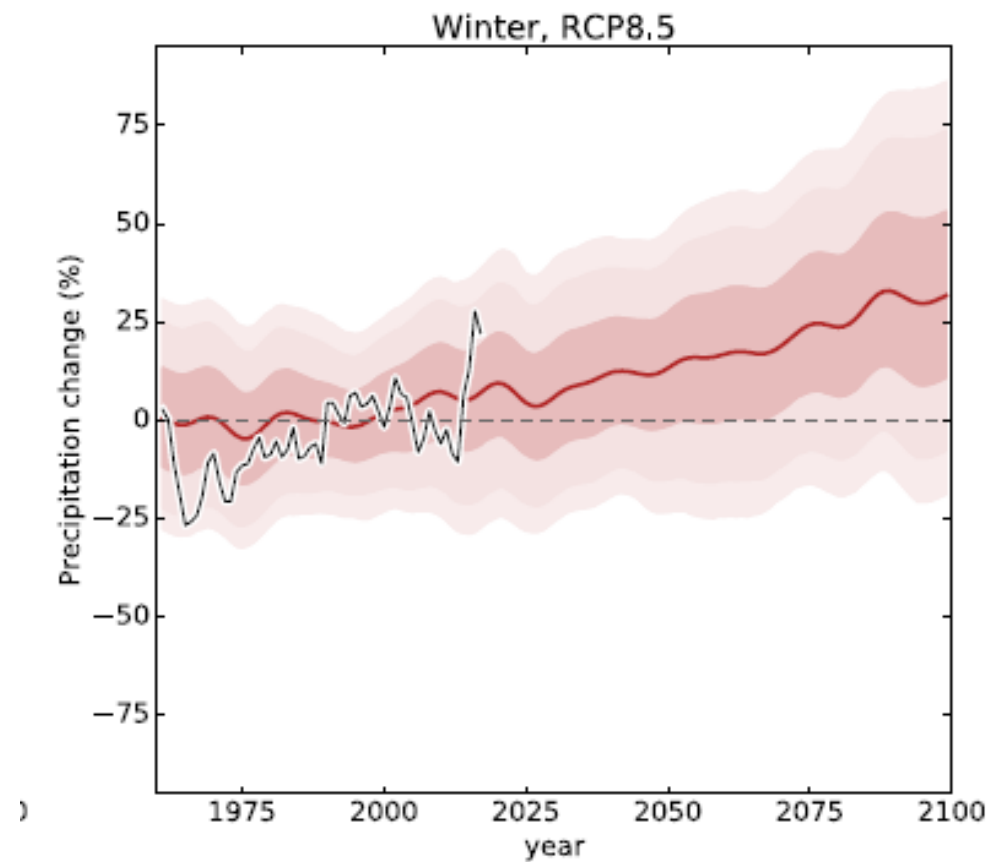
- Winter precipitation is expected to increase significantly
- Summer rainfall is expected to decrease significantly
 - But when it rains in summer there may be more intense storms
- As for temperature the amount of change depends on future greenhouse gas emissions

England mean winter precipitation

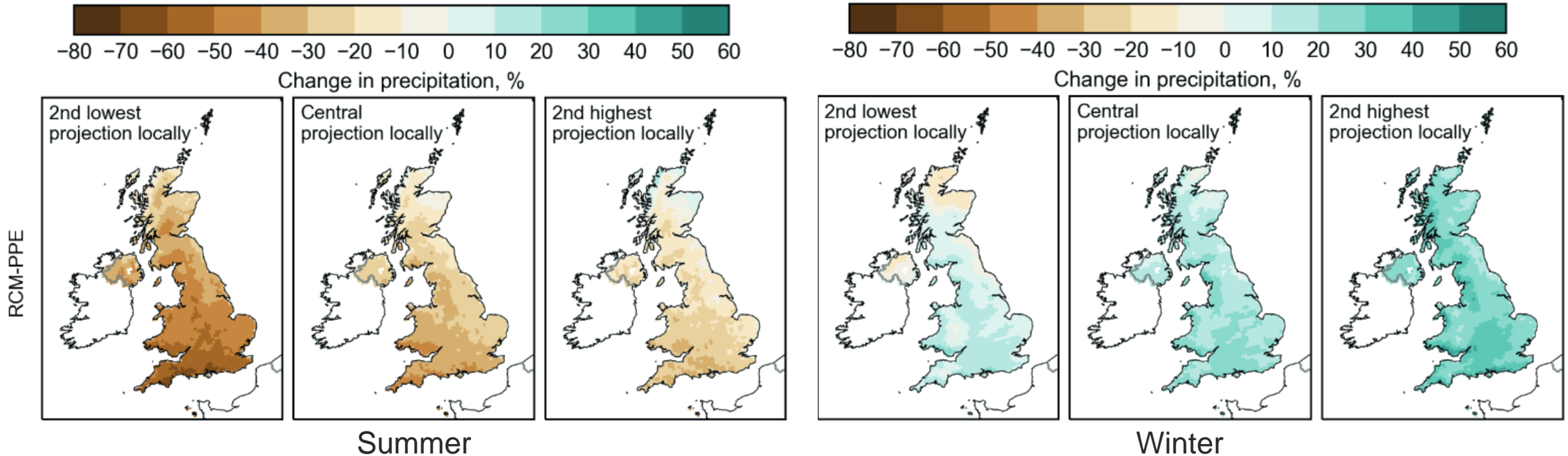


We will still get some dry winters, but wet winters will become wetter

Future UK precipitation



Pattern of precipitation change



The spatial pattern of change to 2061-2080 shows detailed structure over the UK (RCP8.5). Compare SE England and N Scotland.

UKCP18: sea-level rise



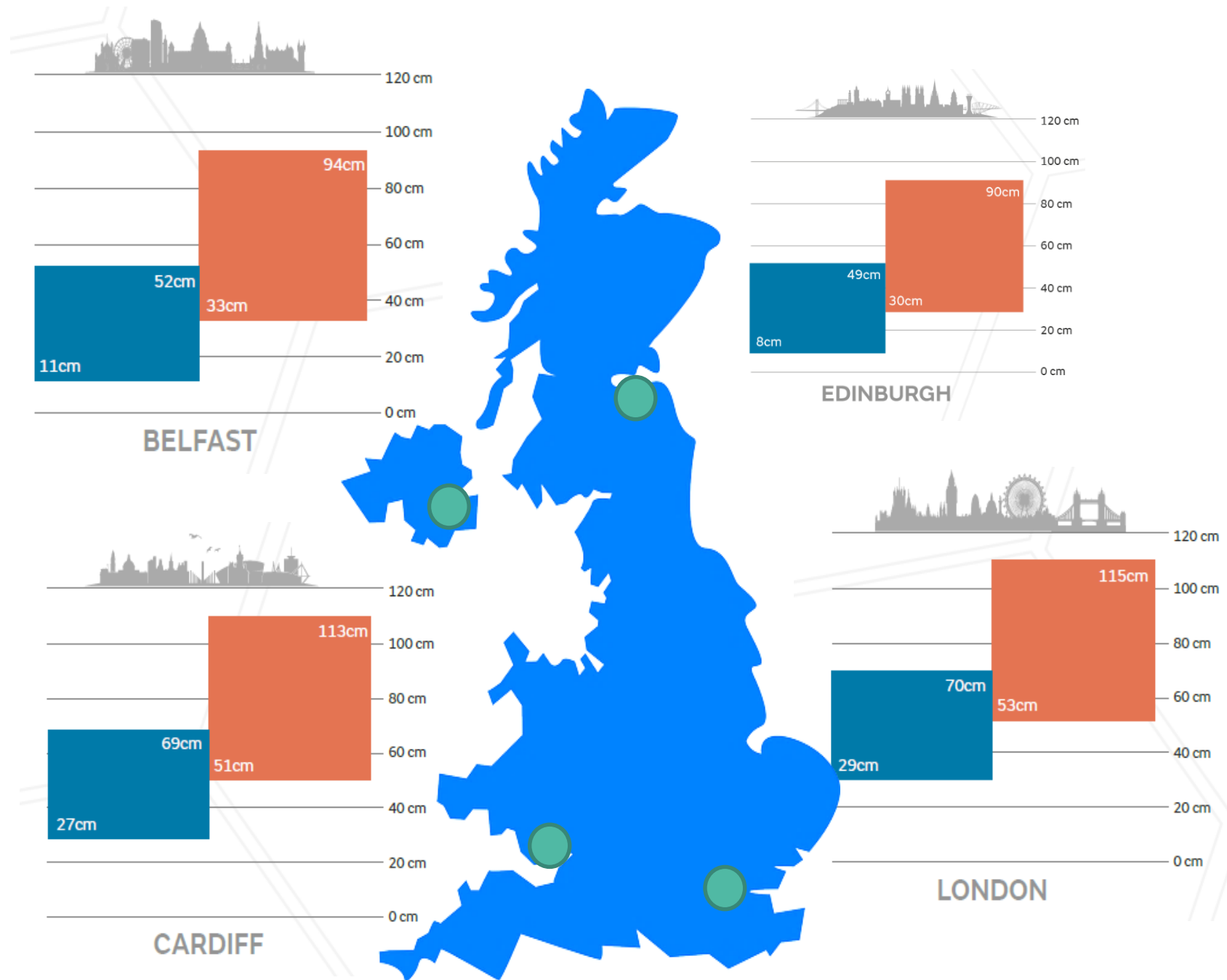
- Sea-level rise will occur for all emission scenarios and at all locations around the UK
- Changes in extreme water levels are mostly driven by changes in mean sea level
 - Best estimate is that surge component won't change, but can't rule out changes
- Sea level will continue to rise beyond year 2100. But the amount is very uncertain
- There may be changes in tidal characteristics and waves

Sea-level rise

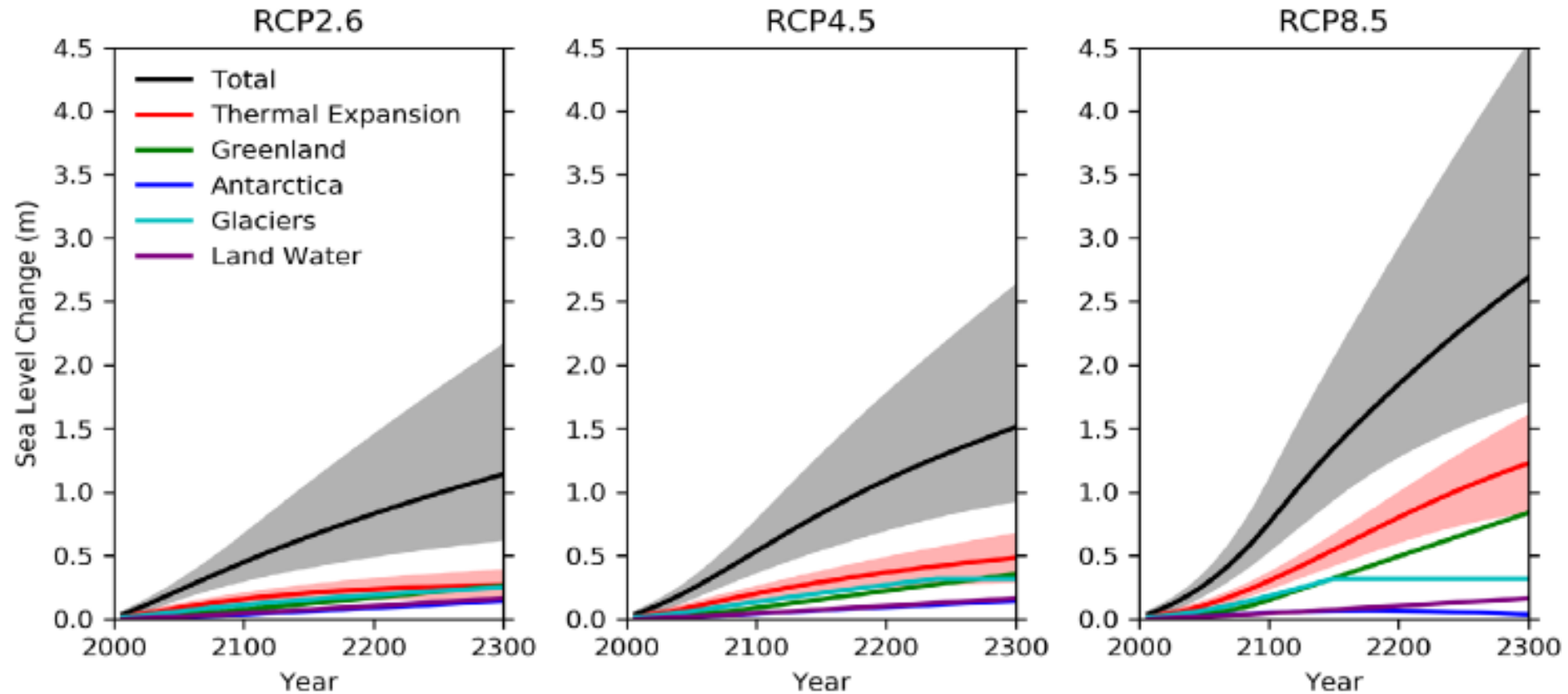
Increase will generally be greater in the south than in the north

 Range in low emission scenario  Range in high emission scenario

(by 2100 relative to 1981-2000)



UKCP18: sea-level rise

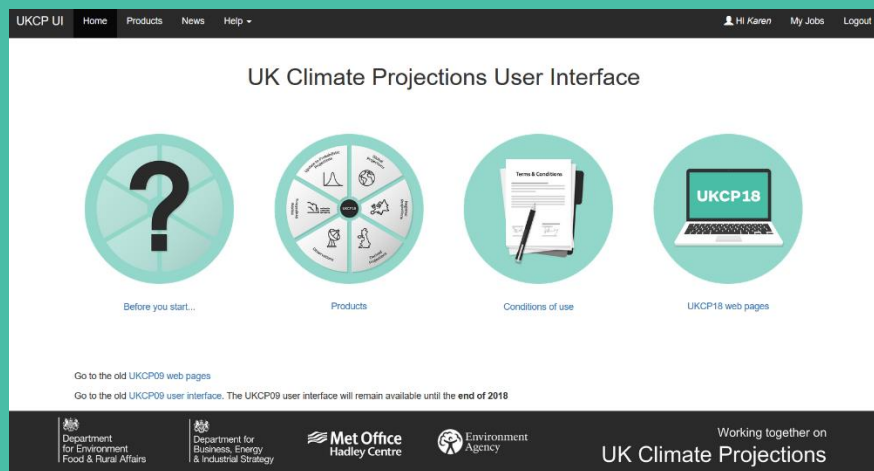


Sea levels continue to rise long after 2100 – even in lowest scenario

Where do I find the new information?

Access the knowledge and data from UKCP18 via 3 main entry points:

- ❖ www.metoffice.gov.uk
- ❖ CEDA Data catalogue - <http://catalogue.ceda.ac.uk/>
- ❖ User Interface



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