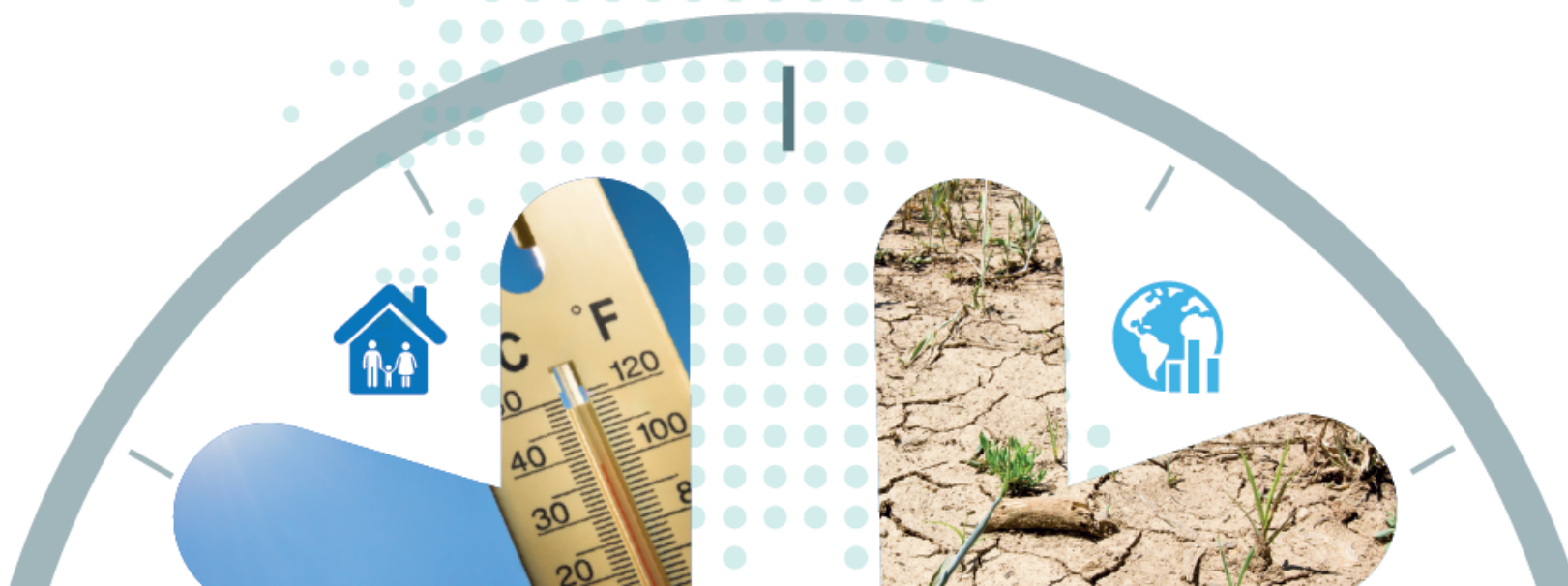


UK Climate Change Risk Assessment 2017

Evidence report: priorities for the next five years

@theCCCuk
#UKClimateRisk



The Adaptation Sub-Committee of the Committee on Climate Change



Statutory roles in the 2008 Climate Act:

- **To provide independent, expert advice** on the UK climate change risk assessment (advisory role)
- **To report to Parliament on progress** with implementation of the NAP (scrutiny role)



Prof Lord John
Krebs (chair)

Ece
Ozdemiroglu



Prof Jim Hall

Prof Dame
Anne Johnson



Rosalyn
Schofield

Sir Graham
Wynne



Based on an assessment of climate risks and opportunities, and current adaptation actions, what are the most urgent priorities for the next national adaptation programme and programmes for devolved administrations?

- 3 years
- c80 authors
- >2,000 pages
- 6,000 review comments
- 6 priority areas

UK CCRA 2017:

Structure and lead contributors



Synthesis Report (50 pages + annexes)

- *Key messages*
- *Risk groupings*
- *Chapter summaries*
- *Urgency scores*

Authored by the ASC

National summaries (80-100 pages each)

- *England*
- *Northern Ireland*
- *Scotland*
- *Wales*

Compiled by the ASC Secretariat

Evidence Report (8 chapters + annexes, ~2,000 pages)

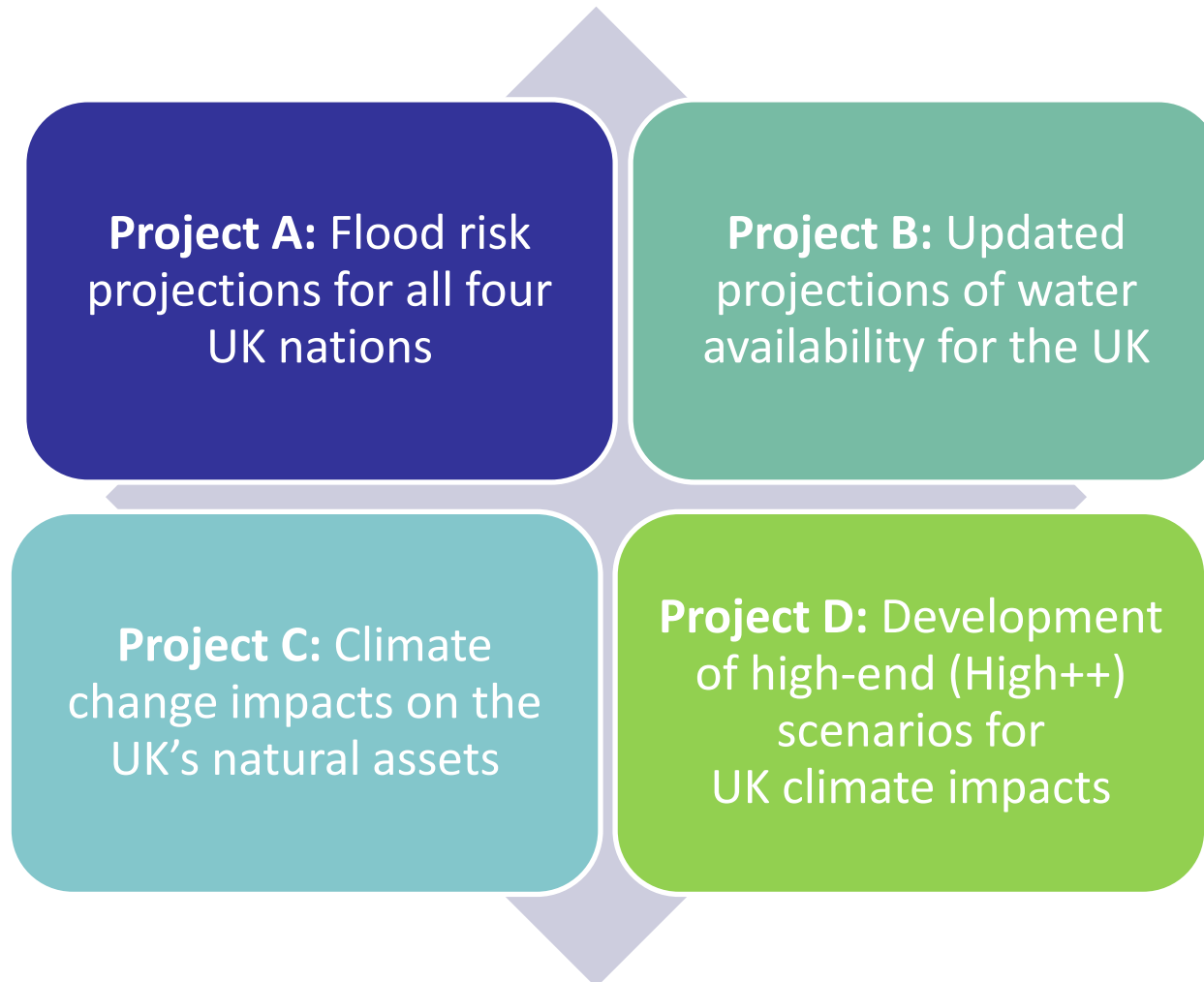
- 1: Introduction (*Kathryn Humphrey – ASC Secretariat, James Murphy – Met Office*)
- 2: Approach and context (*Rachel Warren – UEA*)
- 3: Natural environment and natural assets (*Iain Brown – York*)
- 4: Infrastructure (*Richard Dawson – Newcastle*)
- 5: People and the built environment (*Sari Kovats – LSH&TM, Dan Osborn – UCL*)
- 6: Business and industry (*Swenja Surminski – LSE*)
- 7: International dimensions (*Neil Adger – Exeter, Andy Challinor – Leeds*)
- 8: Cross-cutting issues (*Roger Street – UKCIP*)

Supported by ~70 contributing authors and members of the ASC Secretariat

The most comprehensive assessment of risks and opportunities to date

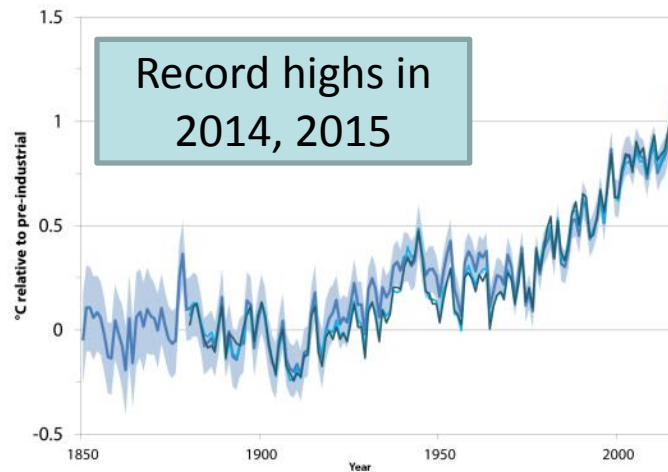
	Direct effects	Indirect effects	Major effects & discontinuities
International: Other international areas of concern	Loss of small island states	Impact on global economy	Large scale global tipping points
UK (imported): Impacts in the UK from international effects	Disruption to trade routes and supply chains	Volatility of food and feedstock prices in the UK	Major shifts in global patterns of food production
UK (domestic): Impacts arising directly in the UK	Flood risks, water scarcity, etc Focus of CCRA1	Cross- sectoral, wider economic	High++ scenarios, major sea level rise Focus of CCRA2

Four NERC-funded research projects

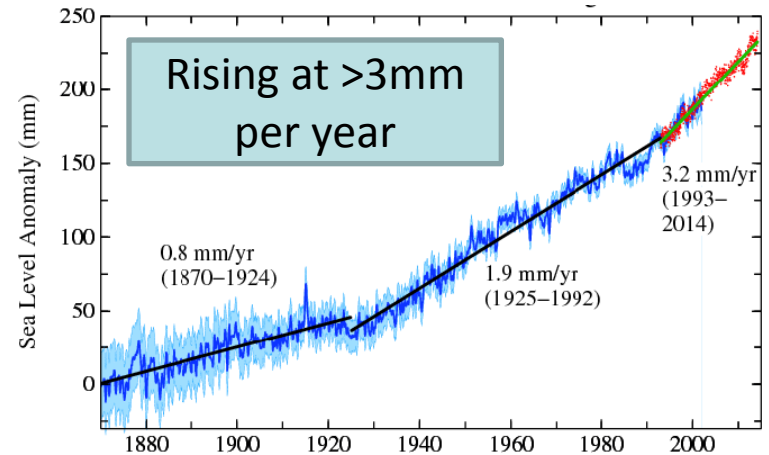


Indicators of climate change

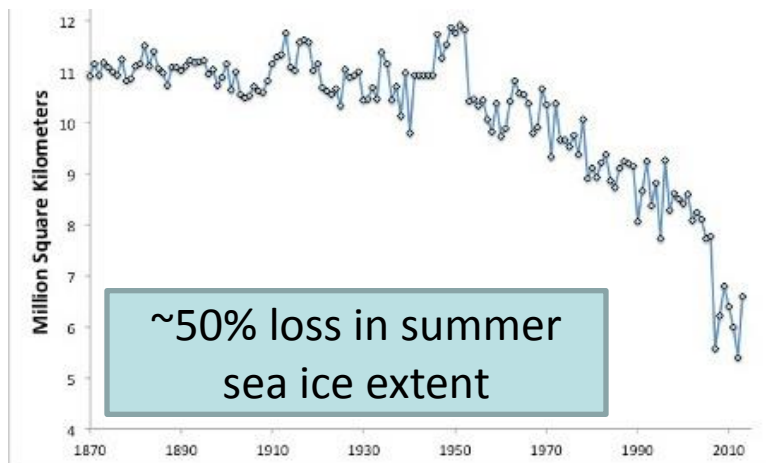
Global average temperature



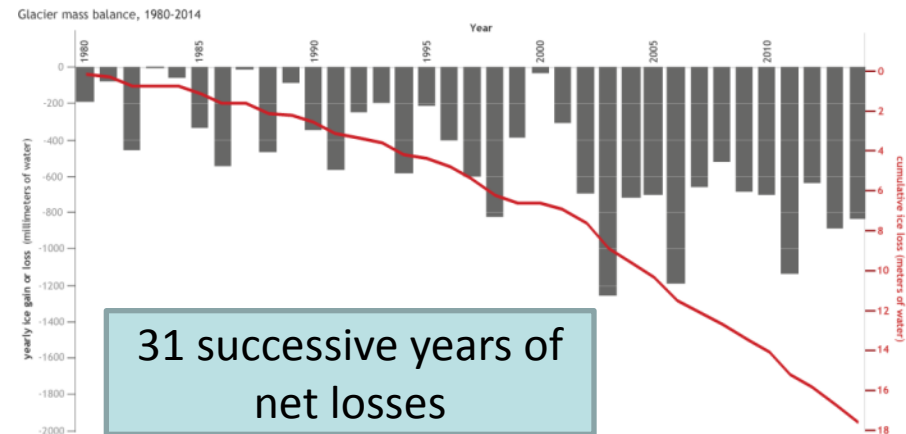
Global average sea level



Summer arctic sea ice extent

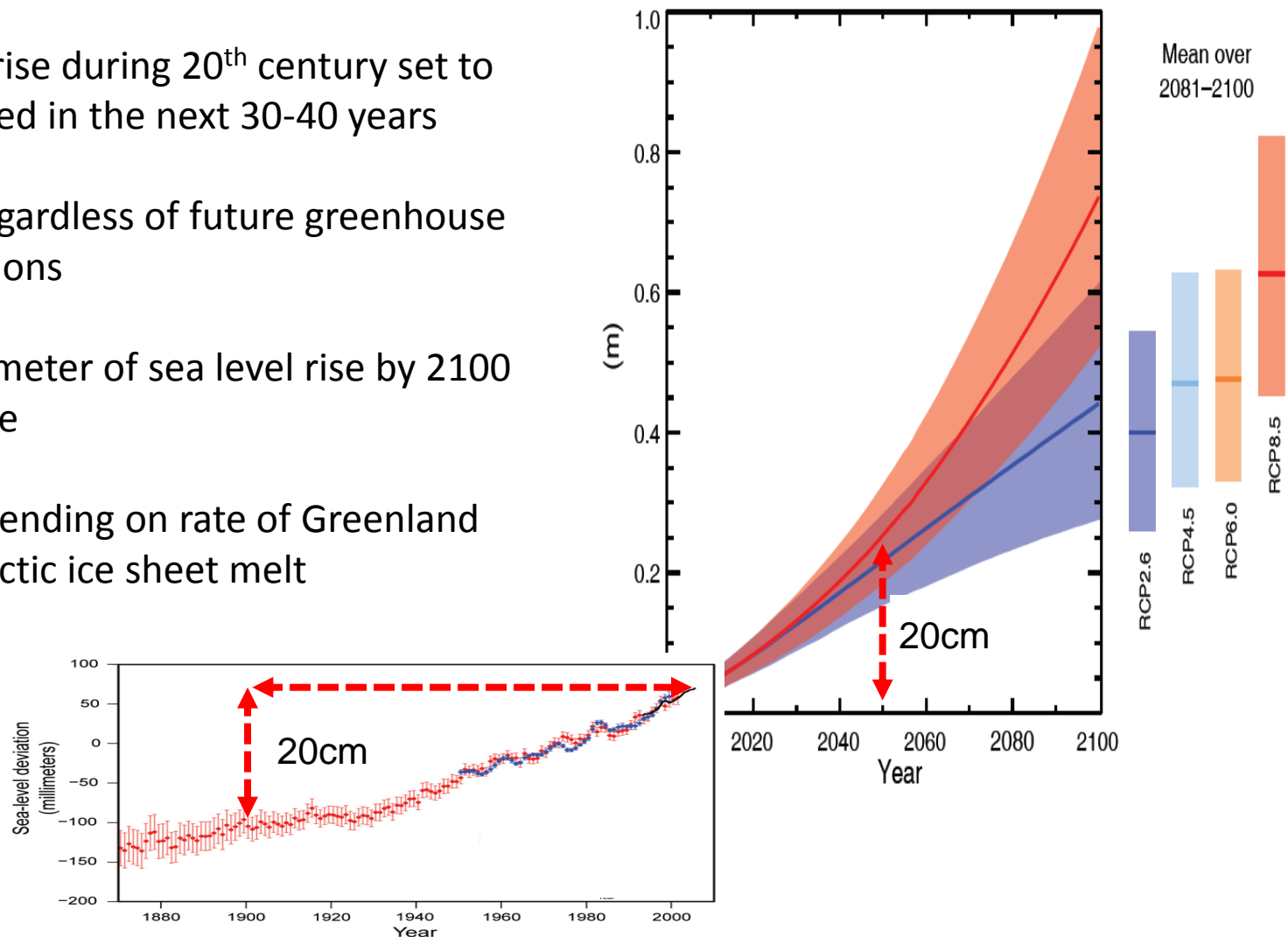


Glacier mass

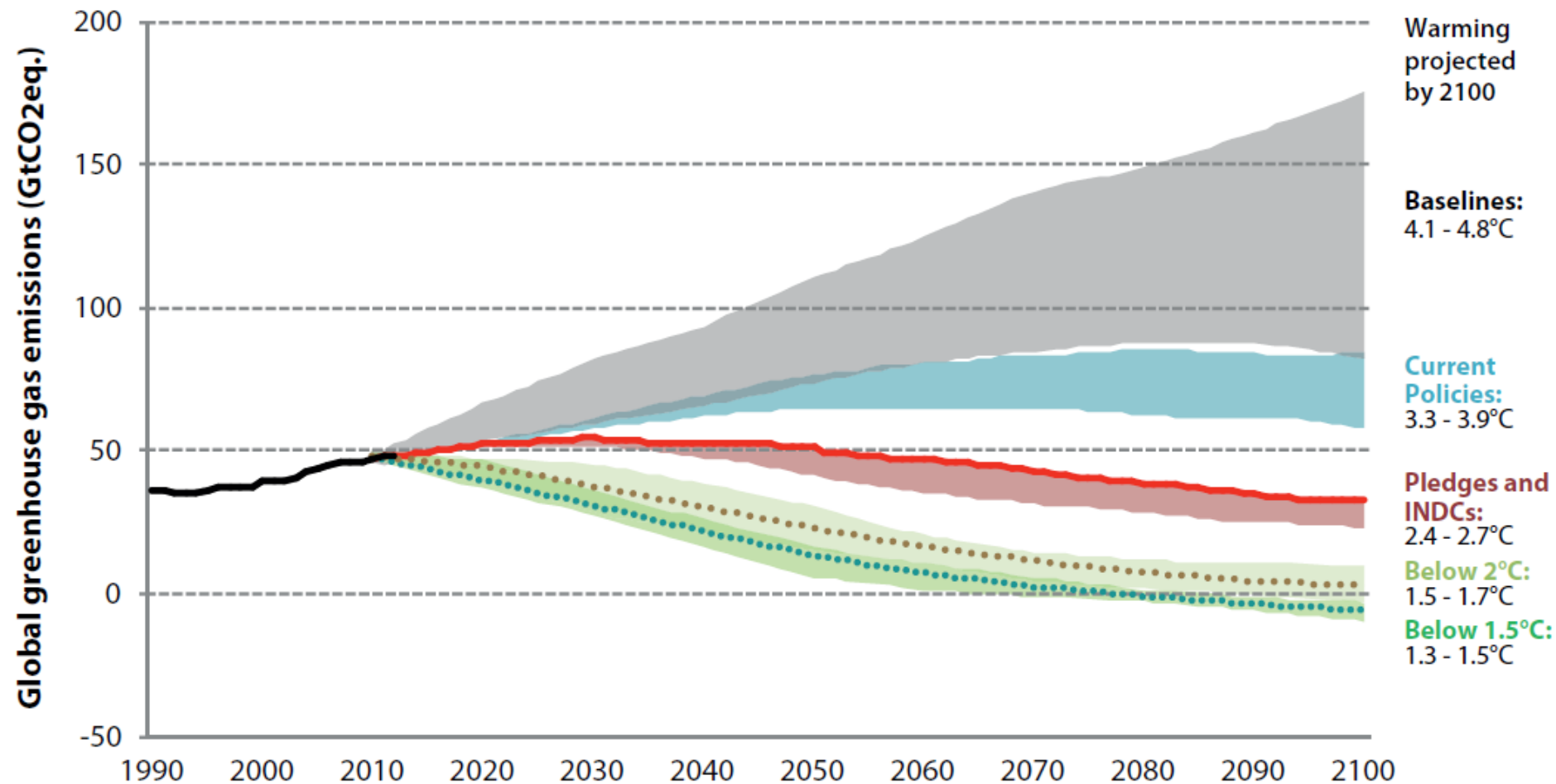


Lag in the Earth's climate system means further changes are inevitable

- Sea level rise during 20th century set to be repeated in the next 30-40 years
- Largely regardless of future greenhouse gas emissions
- Overall a meter of sea level rise by 2100 is plausible
- More depending on rate of Greenland and Antarctic ice sheet melt

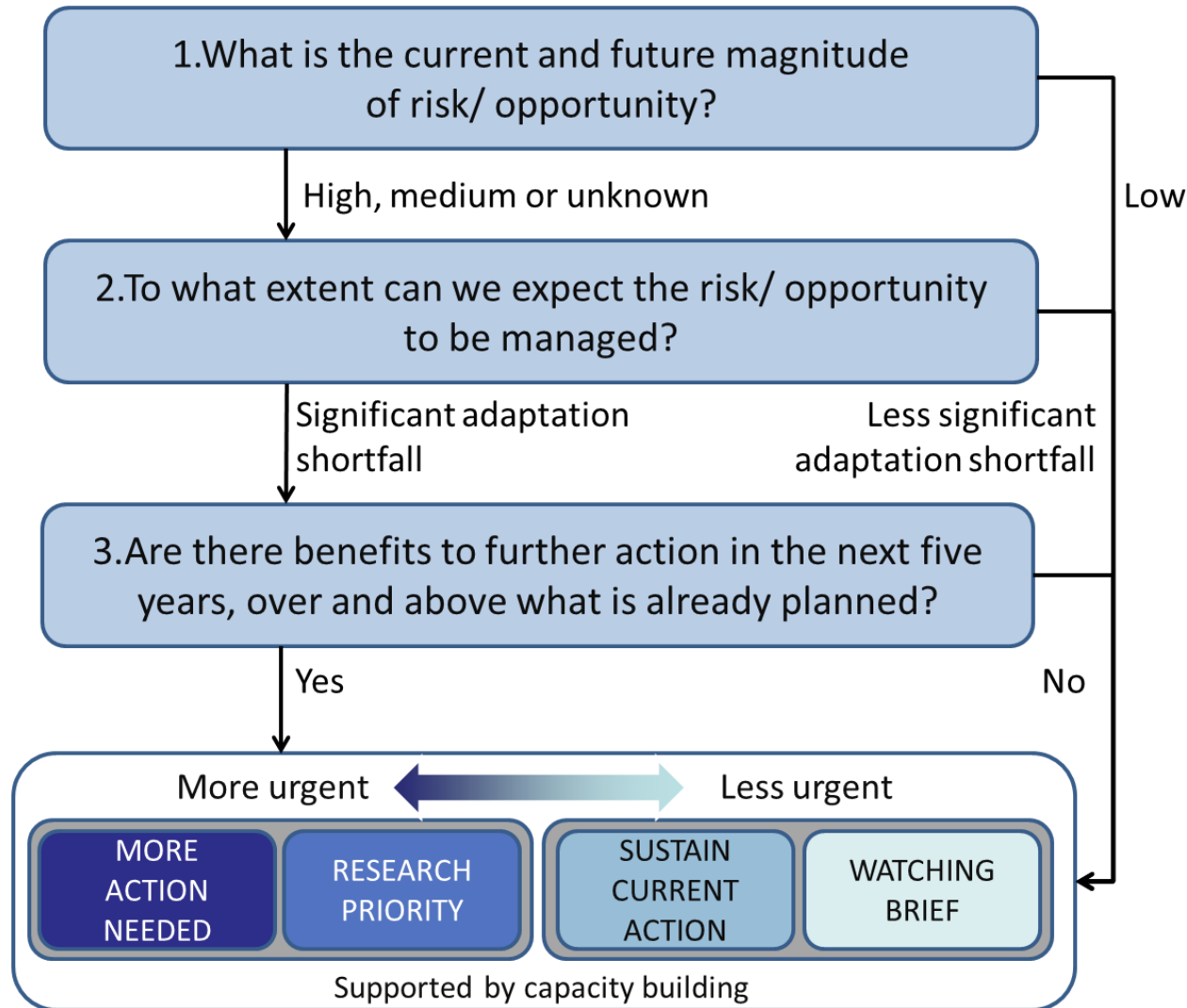


Paris Agreement reduces the chance of 3-5°C warming but some risk remains



- About 60 risks/opportunities identified
- Distilled into six priority areas for urgent action

Identifying the most urgent risks/opportunities



Six priority areas



RISK MAGNITUDE:

LOW

MEDIUM

HIGH

Risks from flooding and coastal change

HIGH MAGNITUDE

HIGH CONFIDENCE

MORE ACTION NEEDED



Dawlish, winter 2013

New sheltered housing development, built 2012



Folkestone,
December 2015



Cockermouth, December 2015

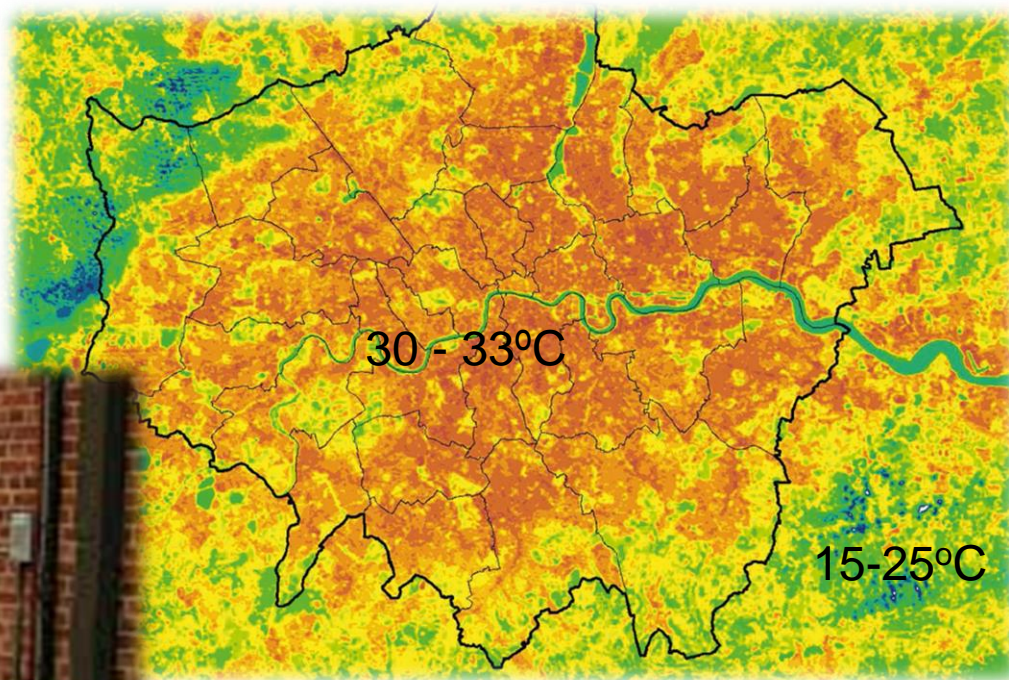
Risks from high temperatures

HIGH MAGNITUDE

HIGH CONFIDENCE

MORE ACTION NEEDED

Urban heat island in London



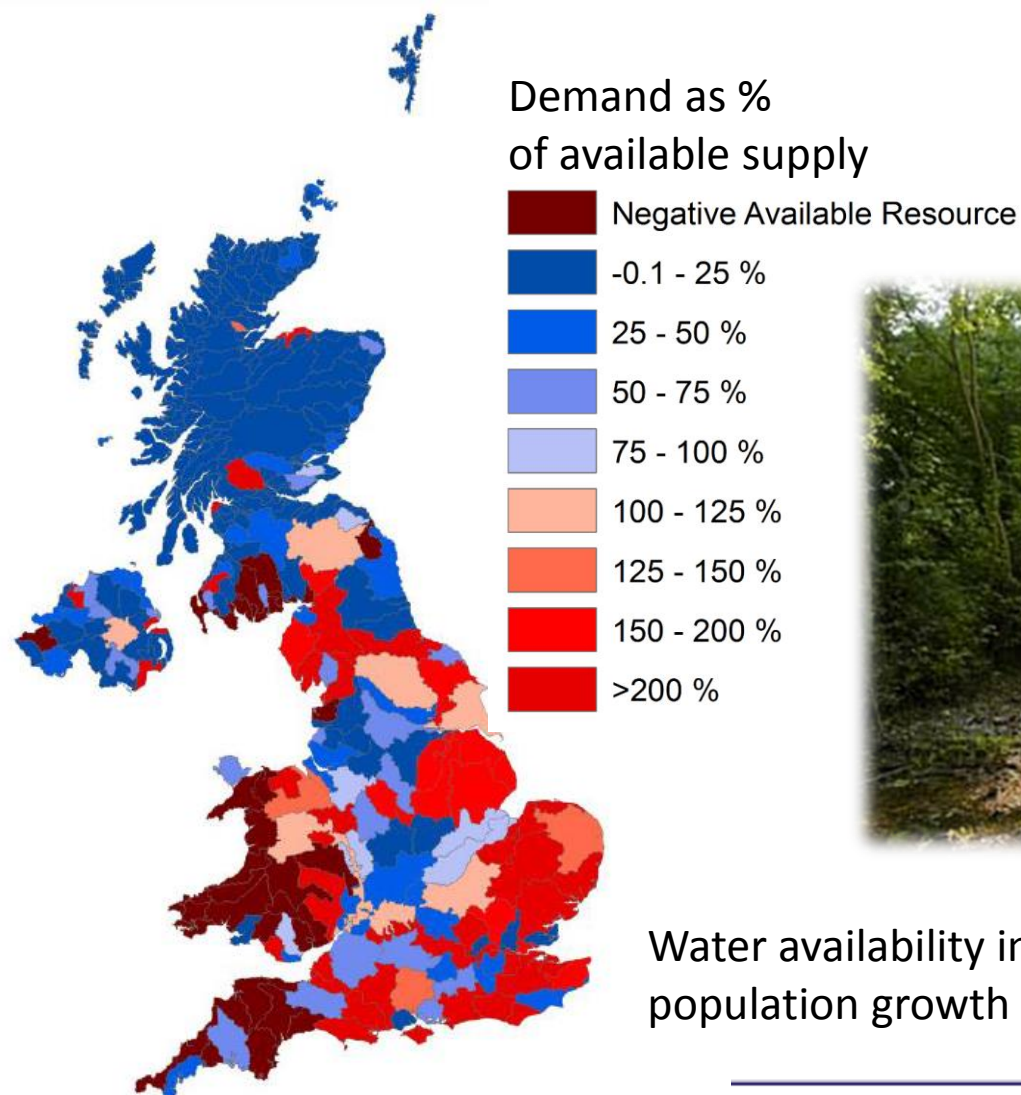
26th June 2011

Risk of shortages in water supply

HIGH MAGNITUDE

HIGH CONFIDENCE

MORE ACTION NEEDED



River Kennet, 2011

Water availability in the 2080s under a 3.5°C, low population growth and high adaptation scenario

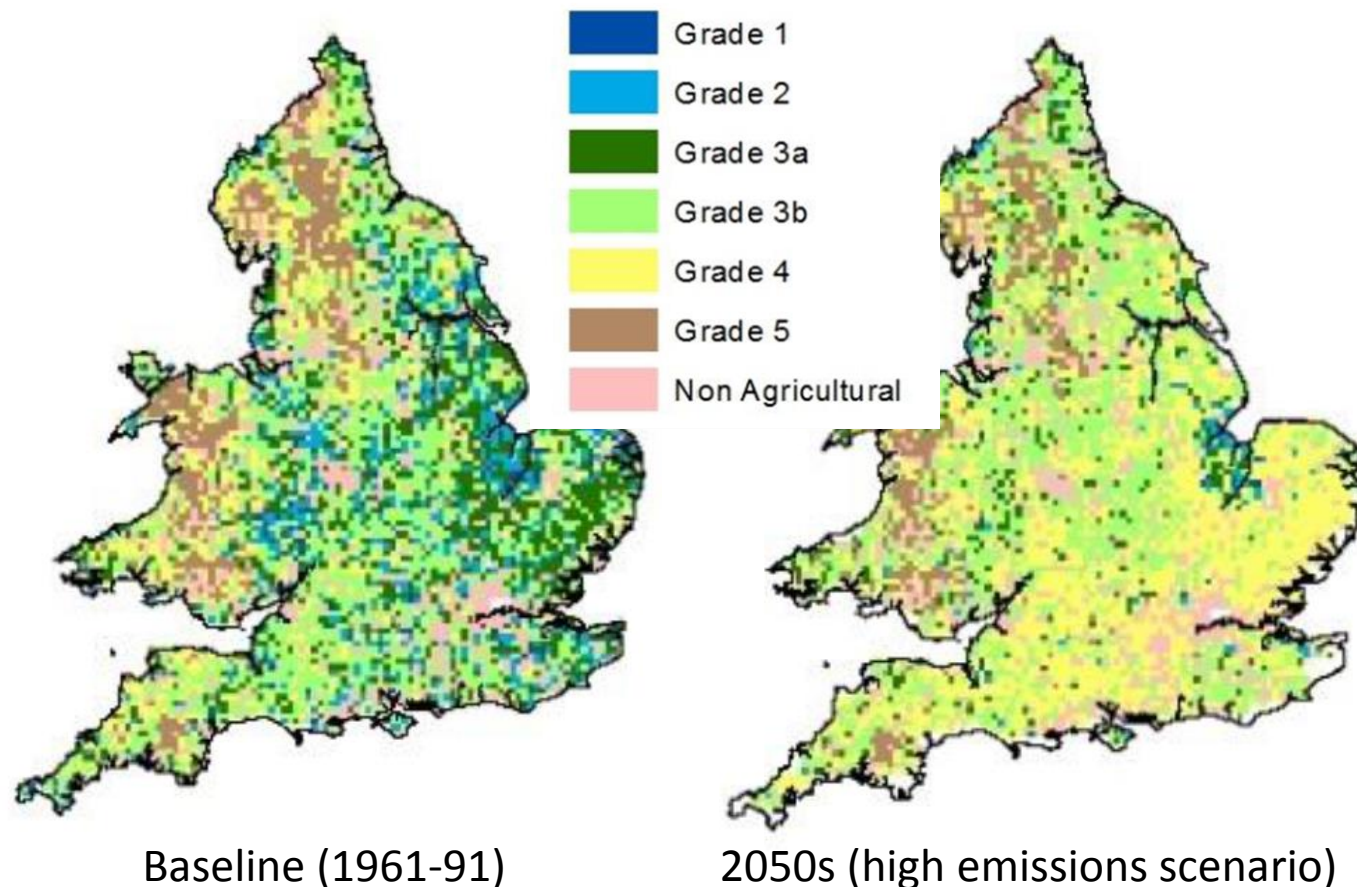
Risks to natural capital

HIGH MAGNITUDE

MEDIUM CONFIDENCE

MORE ACTION NEEDED

Agricultural land classification in England and Wales



Holme post,
nr. Peterborough

Risks to food

HIGH MAGNITUDE

MEDIUM CONFIDENCE

MORE ACTION NEEDED

Origins of food consumed in the UK, 2013



Food vs non-food price inflation (UK)

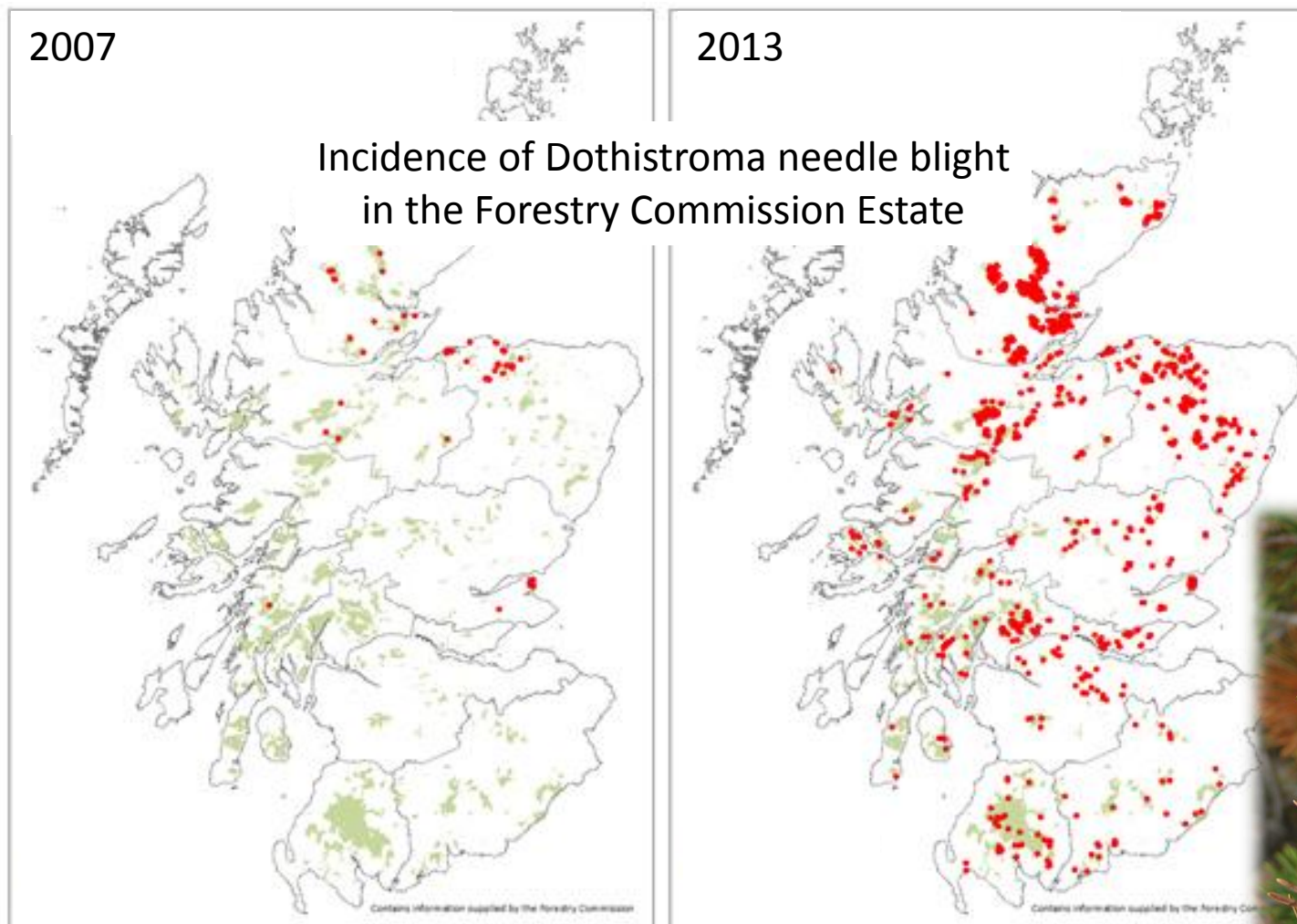


Risk from pests and diseases

HIGH MAGNITUDE

LOW CONFIDENCE

RESEARCH PRIORITY



Are there any opportunities?



Risks in different parts of the UK

Rock Ptarmigan



WETTER DRIER

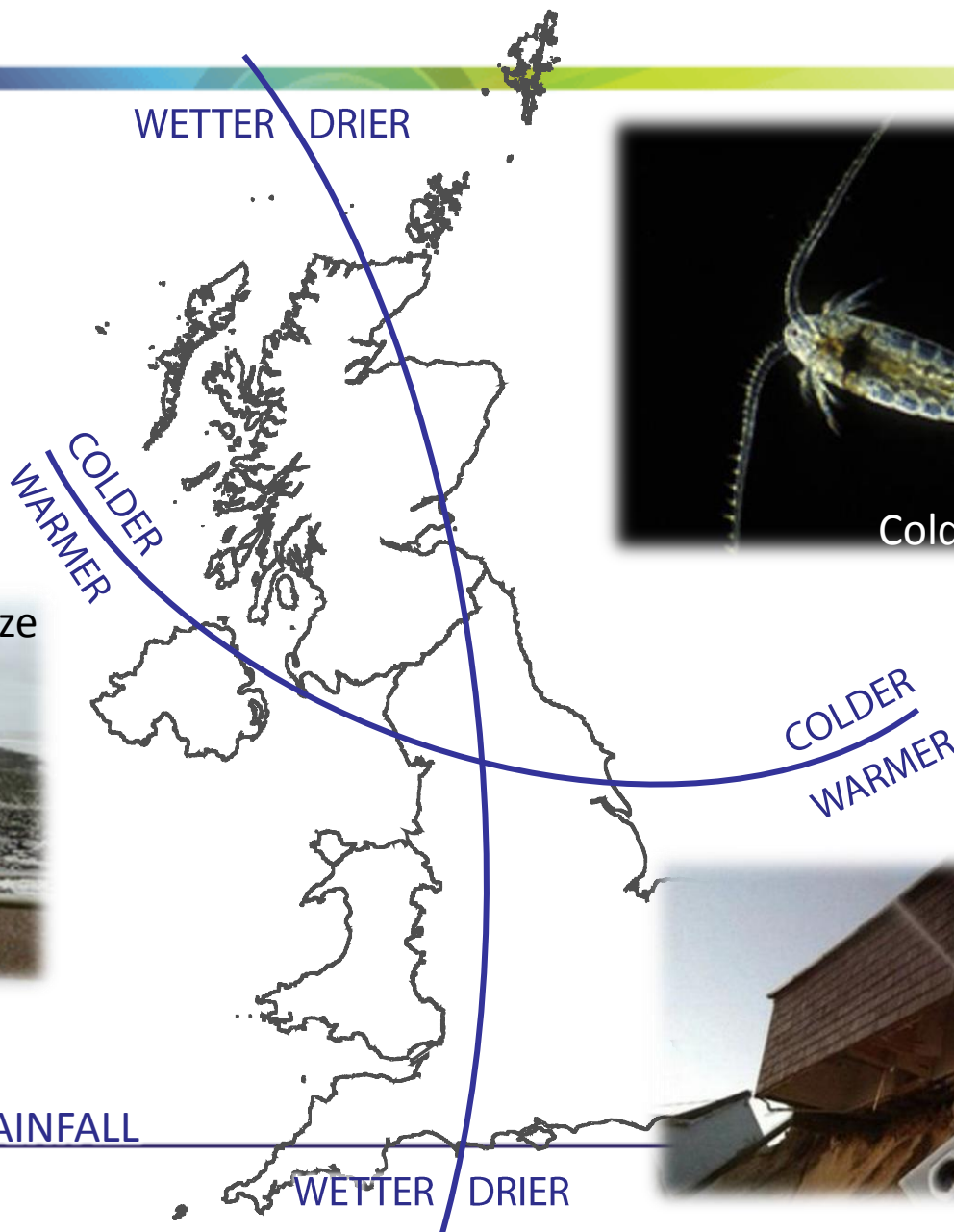


Cold water plankton

Coastal squeeze



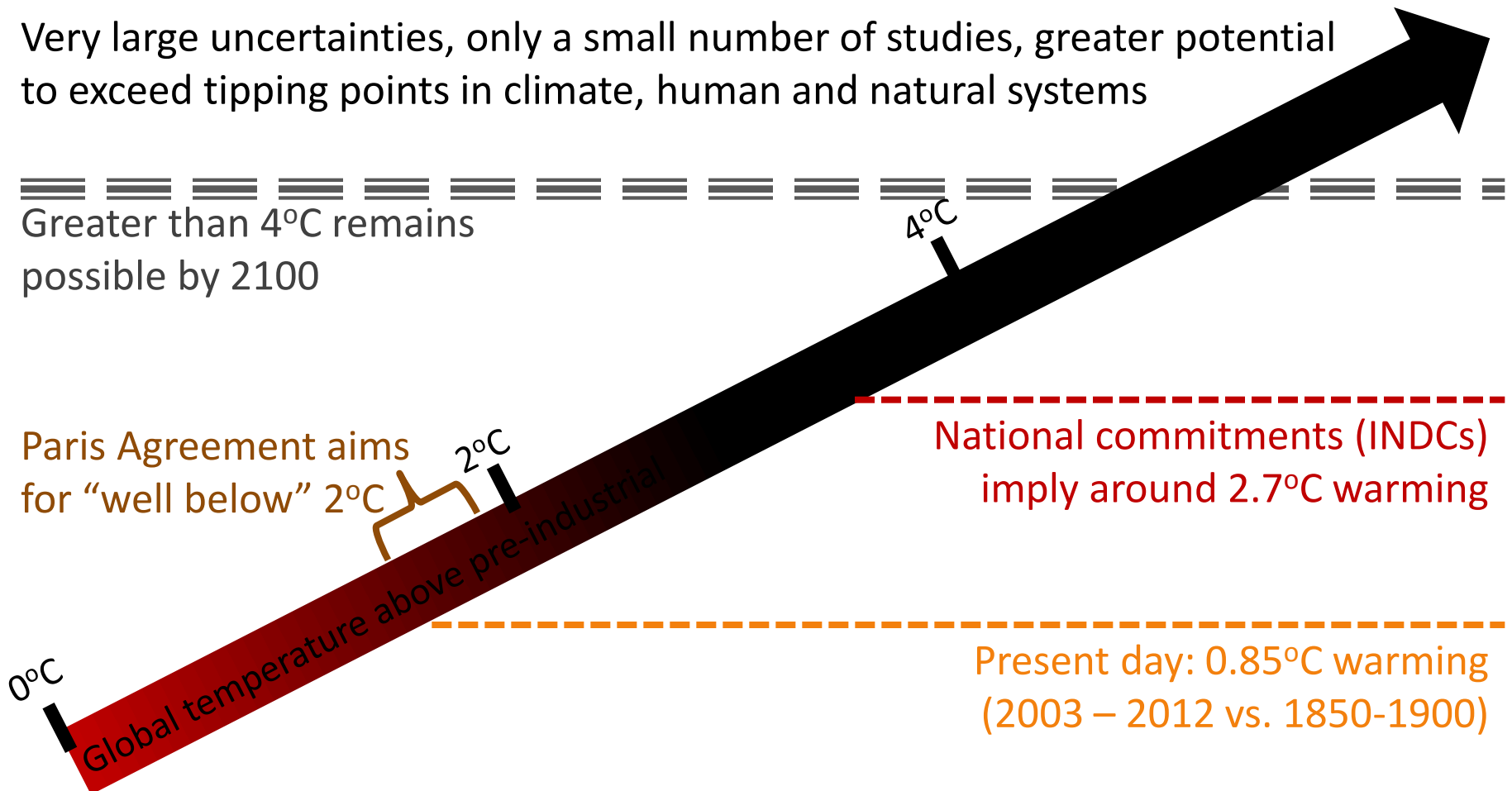
CLIMATIC ZONES FOR
TEMPERATURE AND RAINFALL
(CURRENT CLIMATE)



Hemsby, Norfolk

Uncertainties in the magnitude of future warming and therefore risks

Very large uncertainties, only a small number of studies, greater potential to exceed tipping points in climate, human and natural systems



Next steps

- **CCRA2 research conference:**
 - joint with Government and the research councils (November)
- **CCRA presented to Parliament:**
 - by the Government (January 2017)
- **Updated adaptation programmes:**
 - UK (England): summer 2018
 - Scotland, Northern Ireland: 2019
 - Wales: as part of Wellbeing Act
- **Next ASC statutory progress reports:**
 - Scotland: September 2016
 - UK (England): June 2017

