SUPPLY CHAIN SUSTAINABILITY SCHOOL

Biodiversity & Climate Adaptation

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Welcome & introductions

Ross Primmer
Consultant

ross@actionsustainability.com
07469 140 429
0207 697 1977
@SupplyCSSchool

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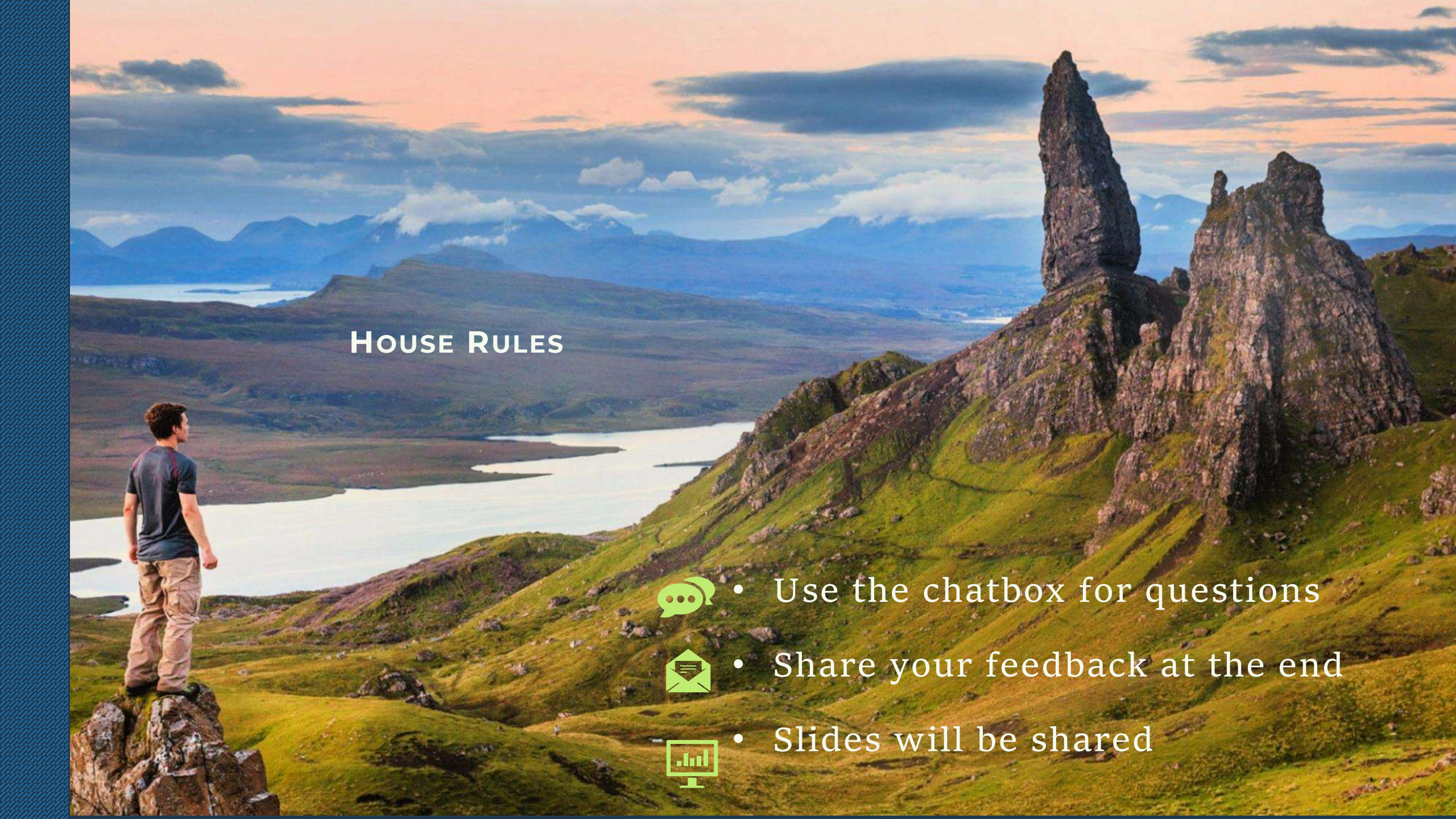
Martin Falkner

Project Manager – Green Infrastructure

Martin.Faulkner@Nature.Scot

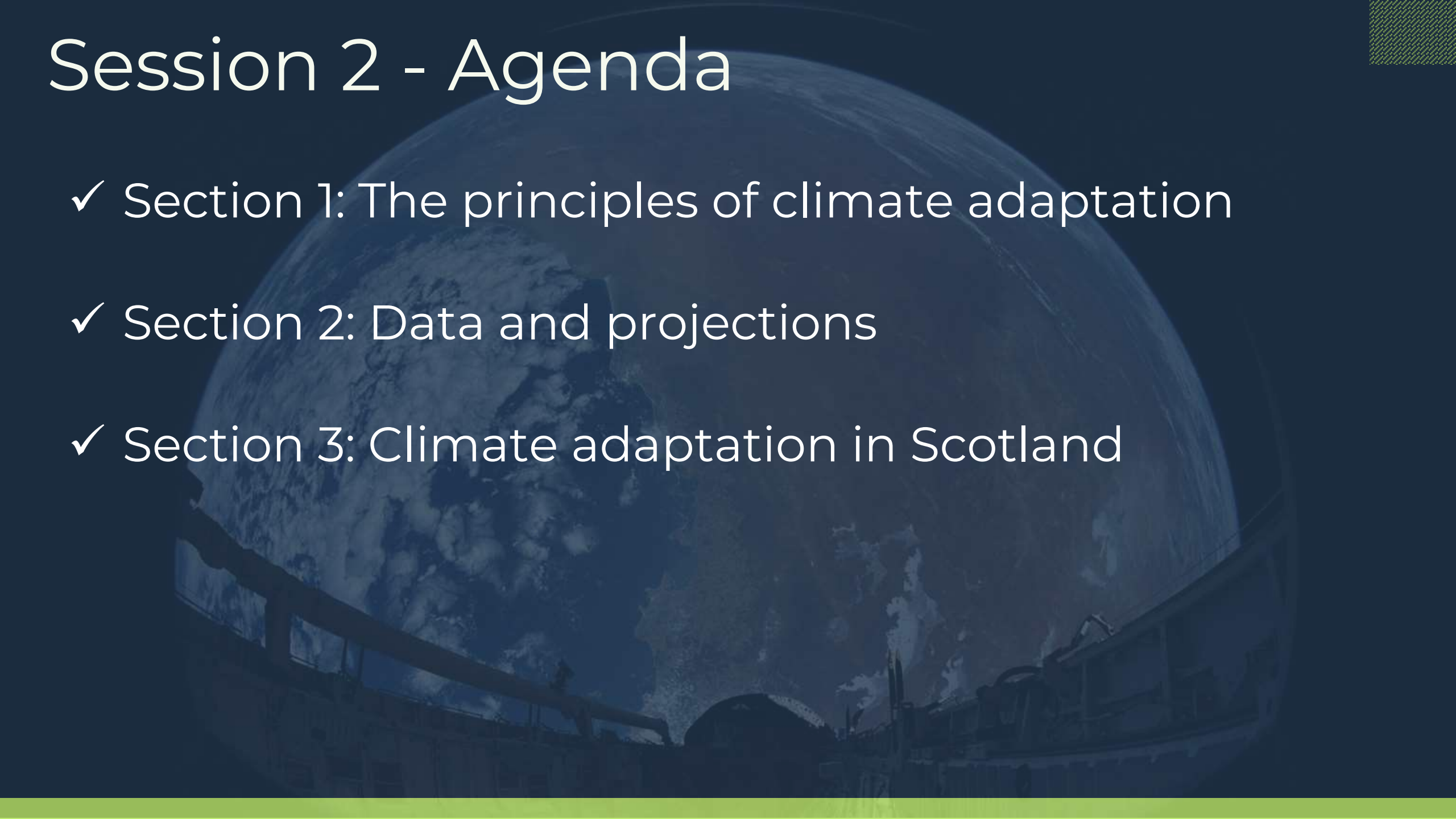
@SupplyCSSchool

House Rules



- Use the chatbox for questions
- Share your feedback at the end
- Slides will be shared

Session 2 - Agenda



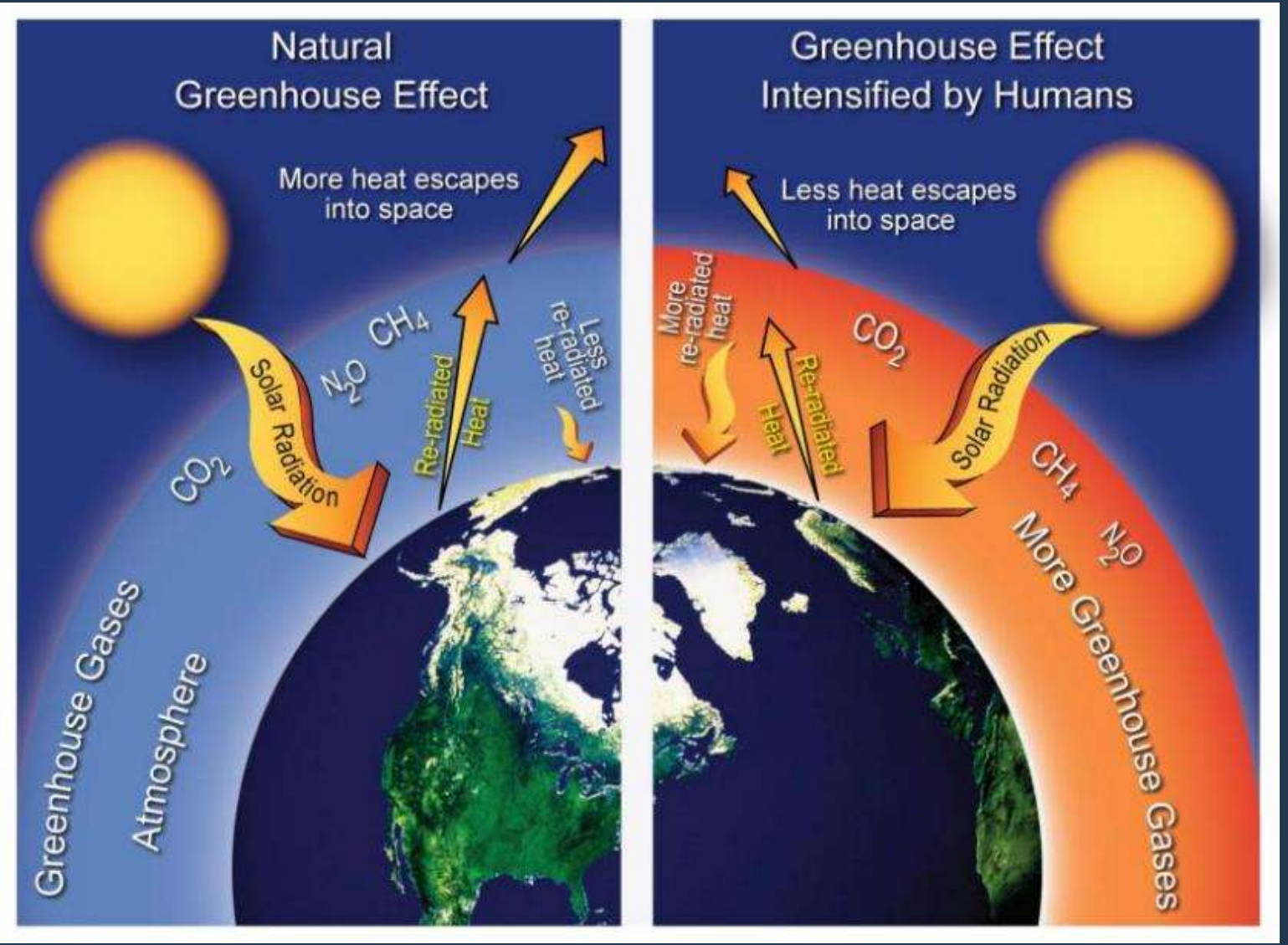
- ✓ Section 1: The principles of climate adaptation
- ✓ Section 2: Data and projections
- ✓ Section 3: Climate adaptation in Scotland

SECTION 1: The Principles of Climate Adaptation

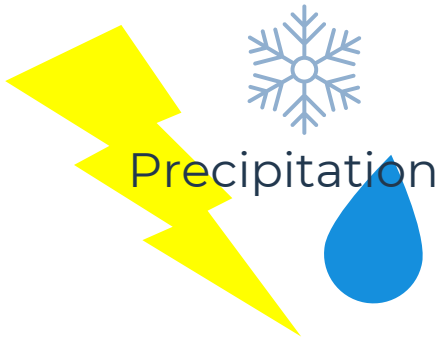
Menti Word Cloud – What does climate change adaptation mean to you?

www.menti.com
4968 1726

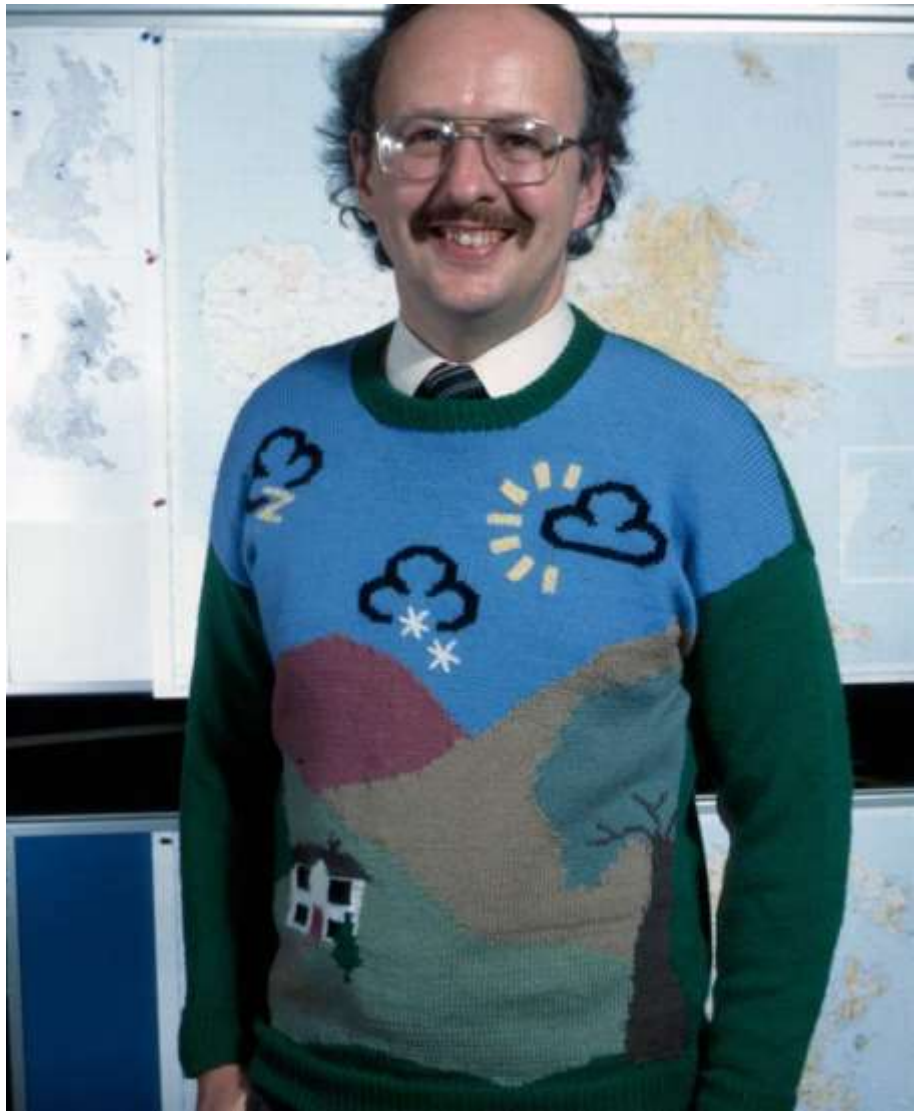
The Greenhouse Effect

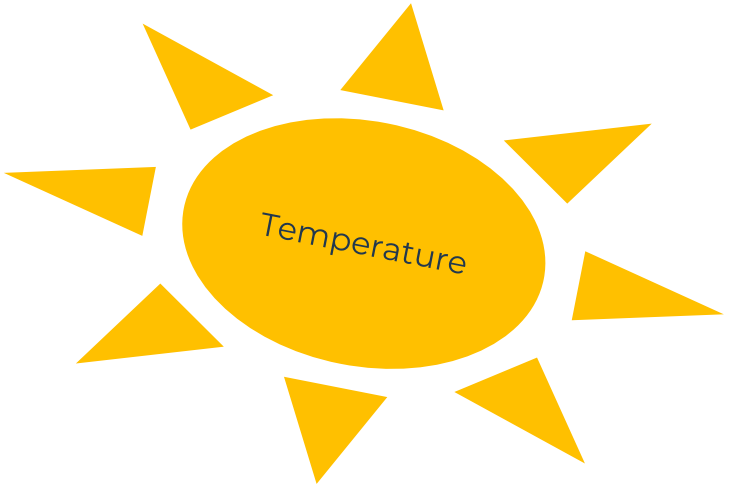


What is Weather & Climate?



Precipitation





Topography

Pressure

Weather and Climate - Introduction

- **Weather you experience on a daily basis**

- **Climate is the average weather experienced over time**

Snow in Saudi Arabia, unusual weather!

Rain in London, typical conditions for our temperate maritime climate

Different Climates

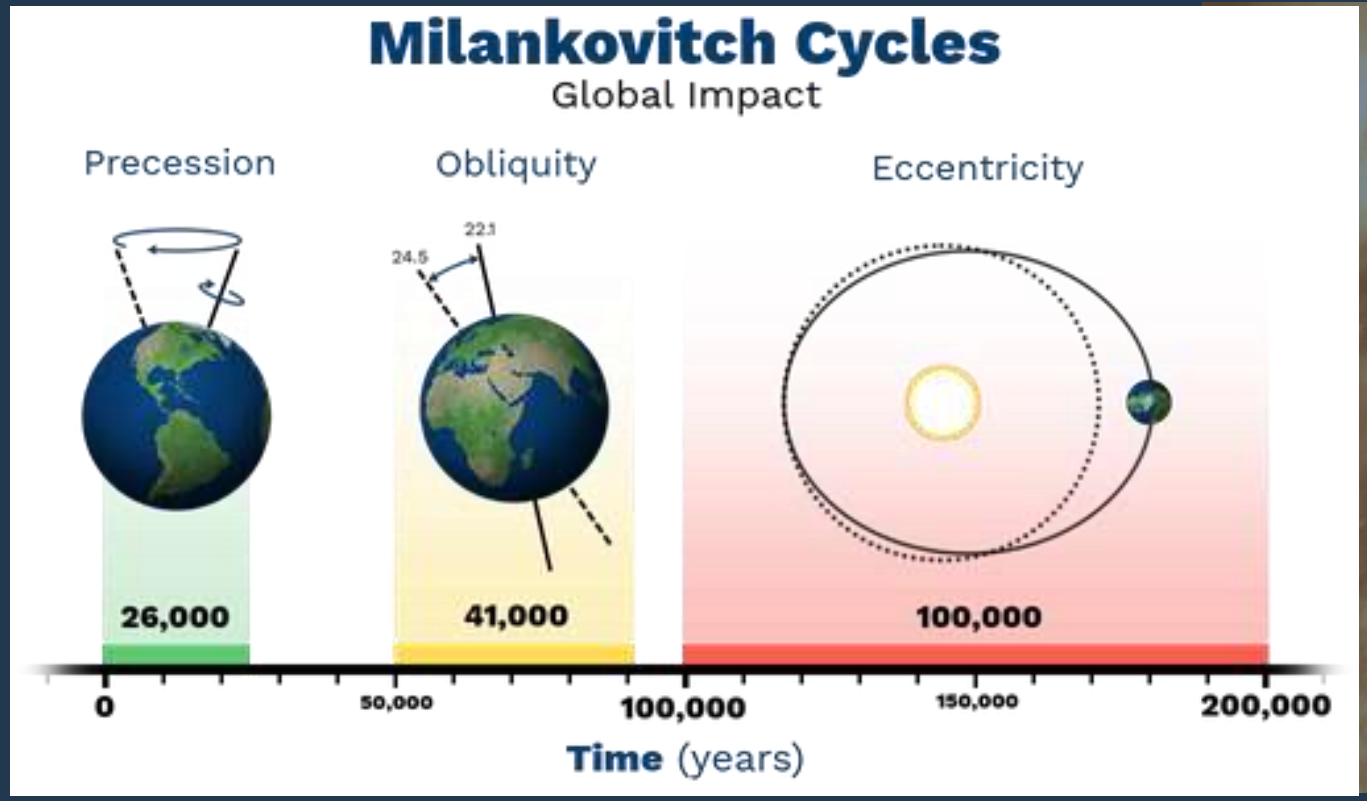
In the UK & Ireland a temperate oceanic climate predominates

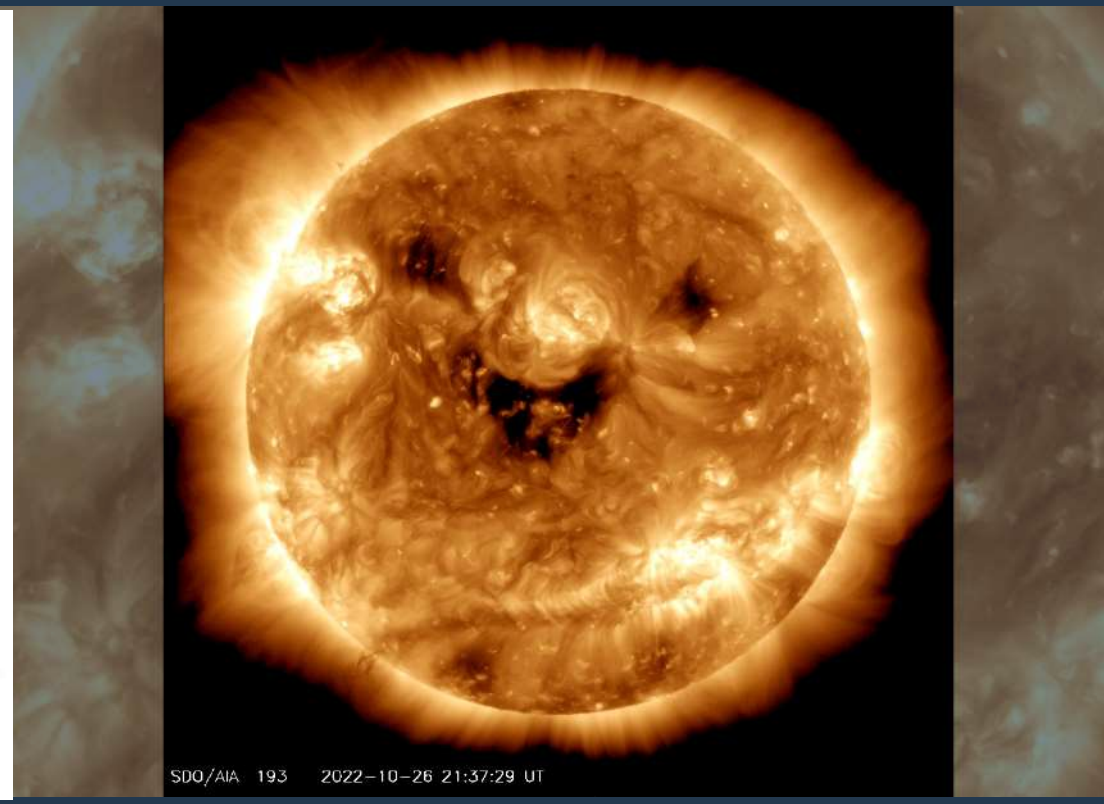
The Arctic and Antarctic experience a polar climate

The Sahara experiences a desert climate

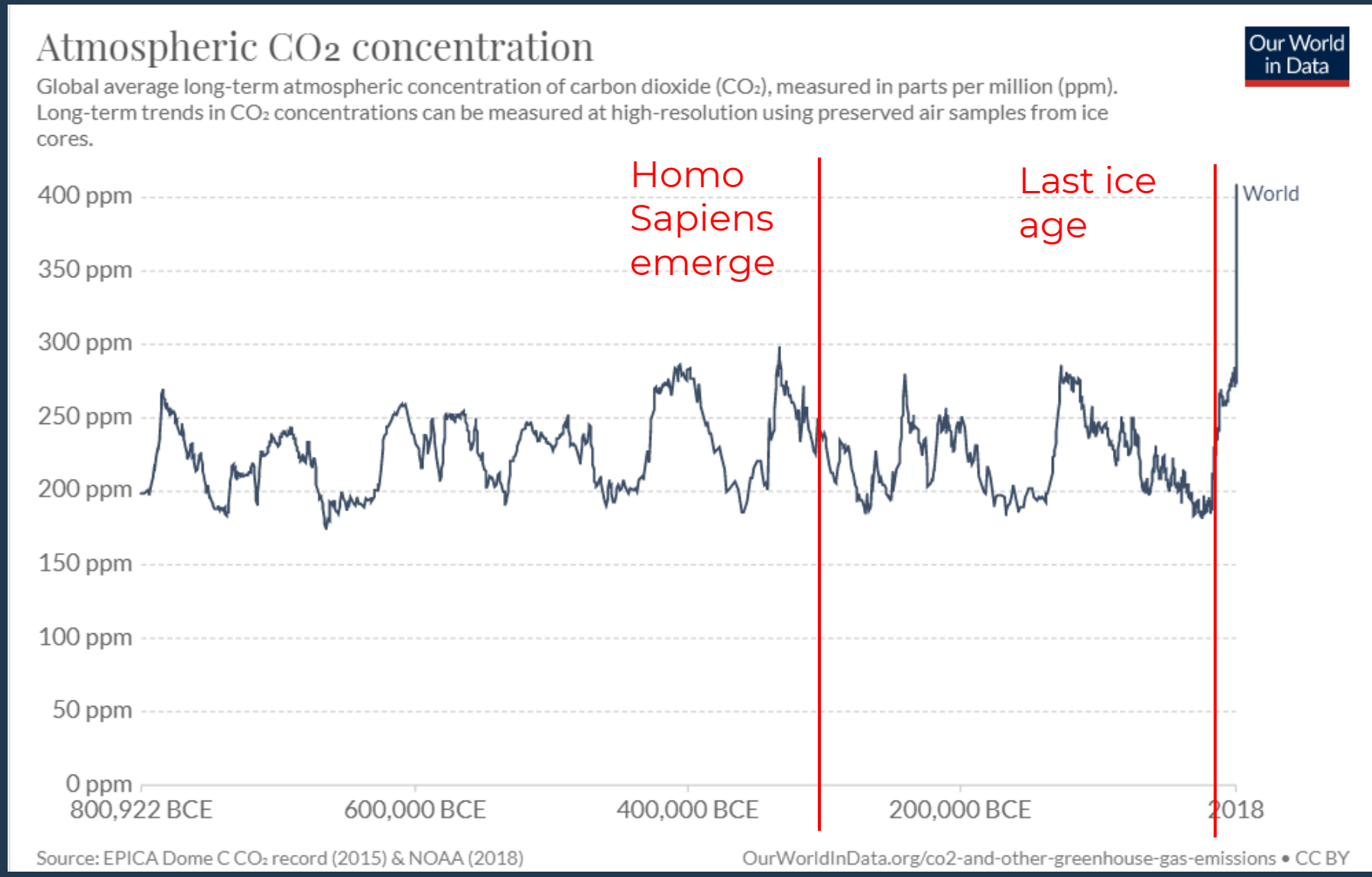
Climate Change adaptation isn't new!

Natural Cycles



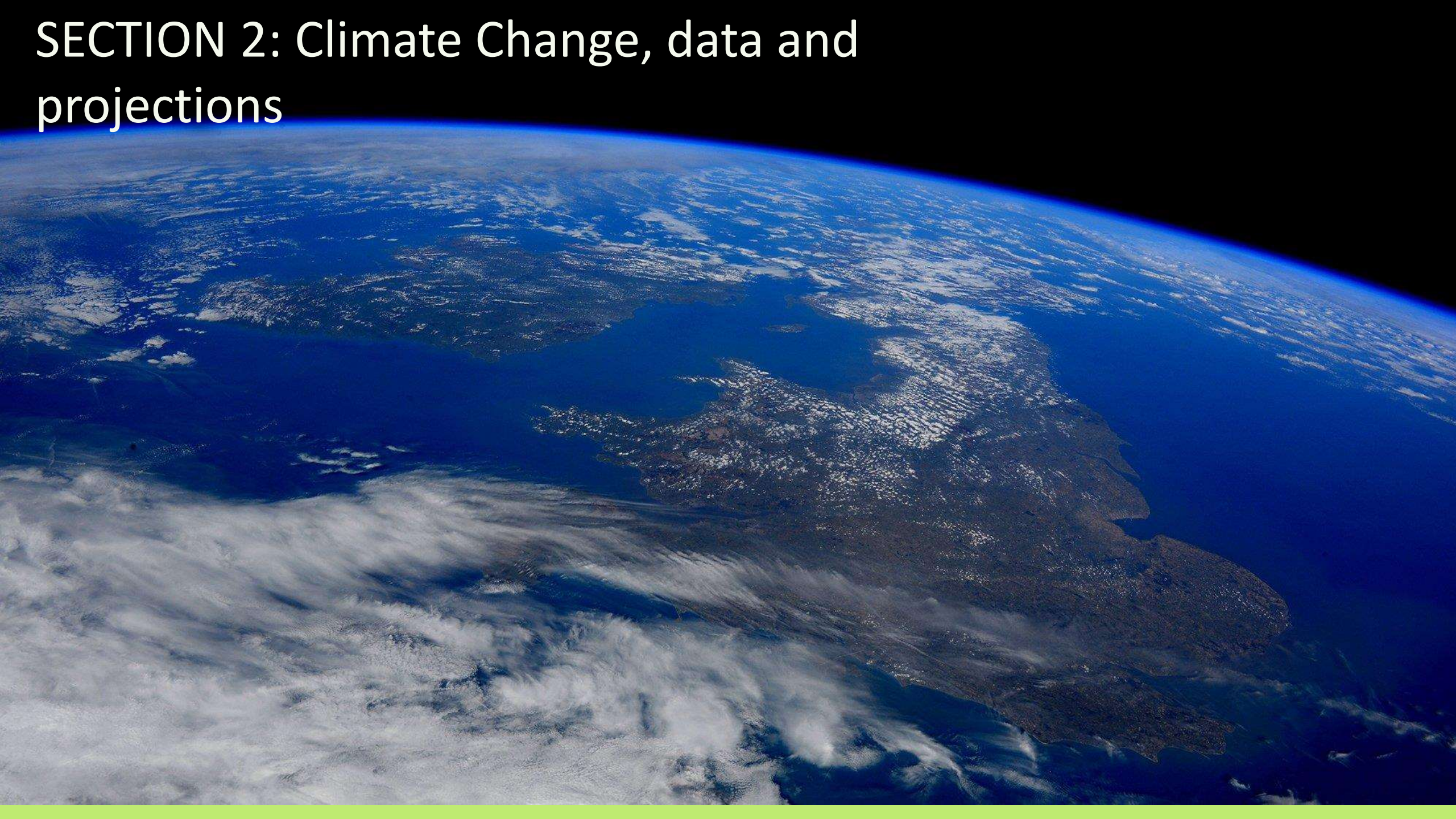


Scene Setting: Going back in time



Our climate has been in a natural rhythm for at least the last 800,000 years

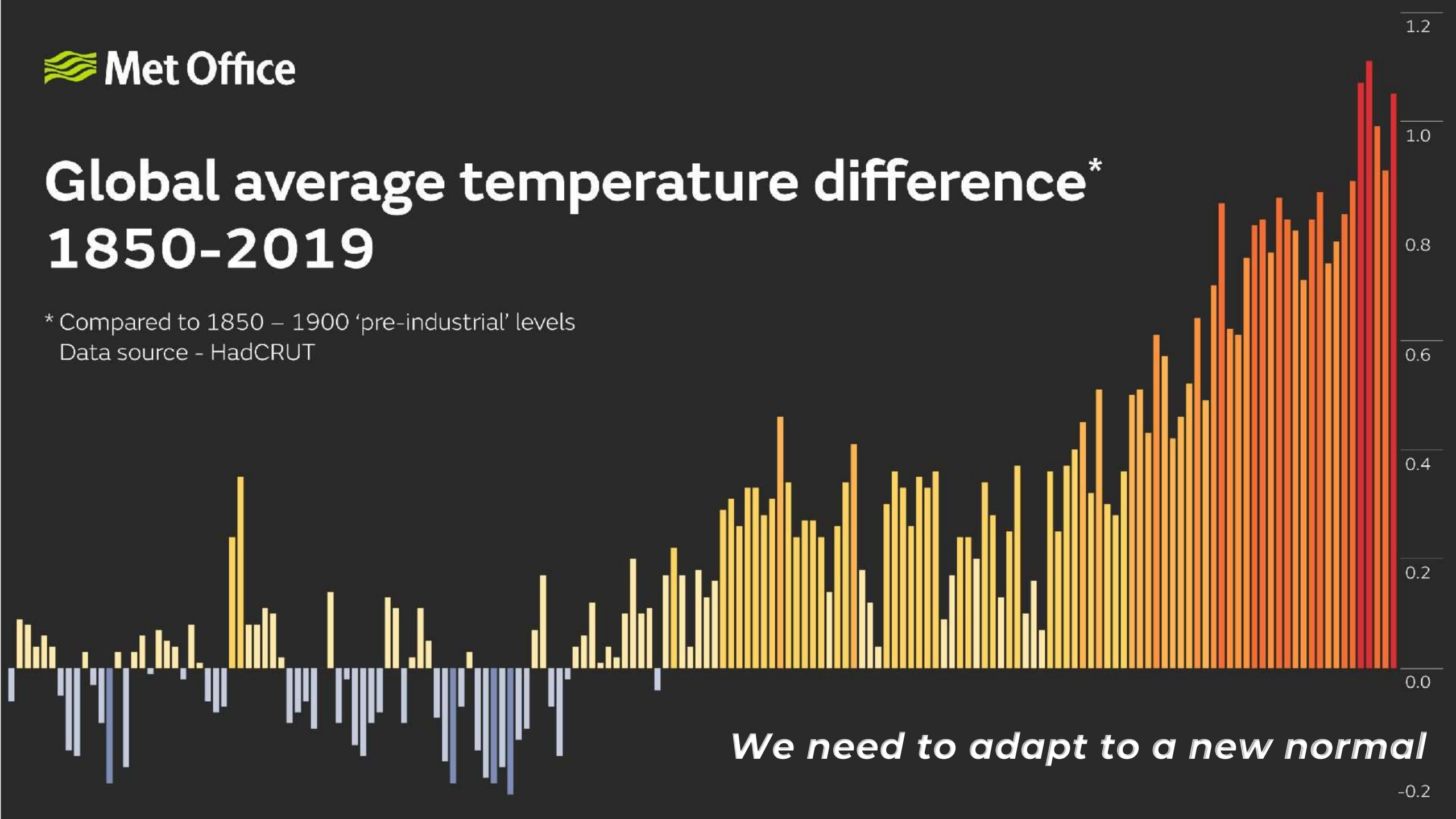
SECTION 2: Climate Change, data and projections



Met Office

Global average temperature difference* 1850-2019

* Compared to 1850 – 1900 'pre-industrial' levels
Data source - HadCRUT



We need to adapt to a new normal

Climate Change Projections

By 2070 Met office predictions estimate the following

Temperature

- 0.9°C to 5.4°C warmer in summer
- 0.7°C to 4.2°C warmer in winter
- Hot summers expected to become more common
- More “hot spells” – 2 or more days over 30C. Rising from 0.2 occurrences per year to 4.1 by 2070

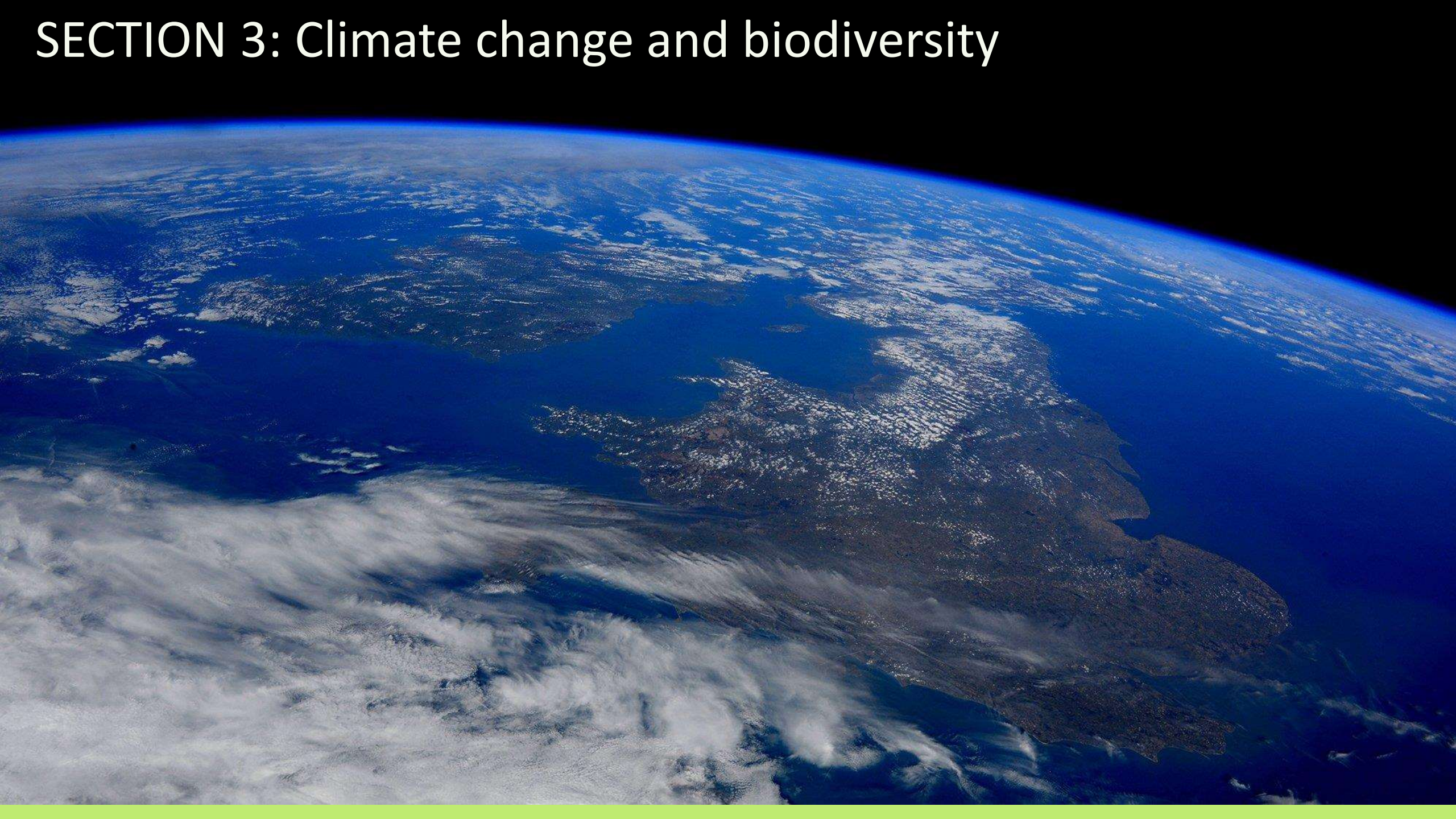
Precipitation

- -47% to +2% in summer
- -1% to +35% in winter
- Future increases in the intensity of summer rainfall events

Scientists estimate that average global temperatures were 6-8 °C cooler during the last ice age

Our climate is likely to become warmer and wetter, with more extreme rainfall events in summer

SECTION 3: Climate change and biodiversity

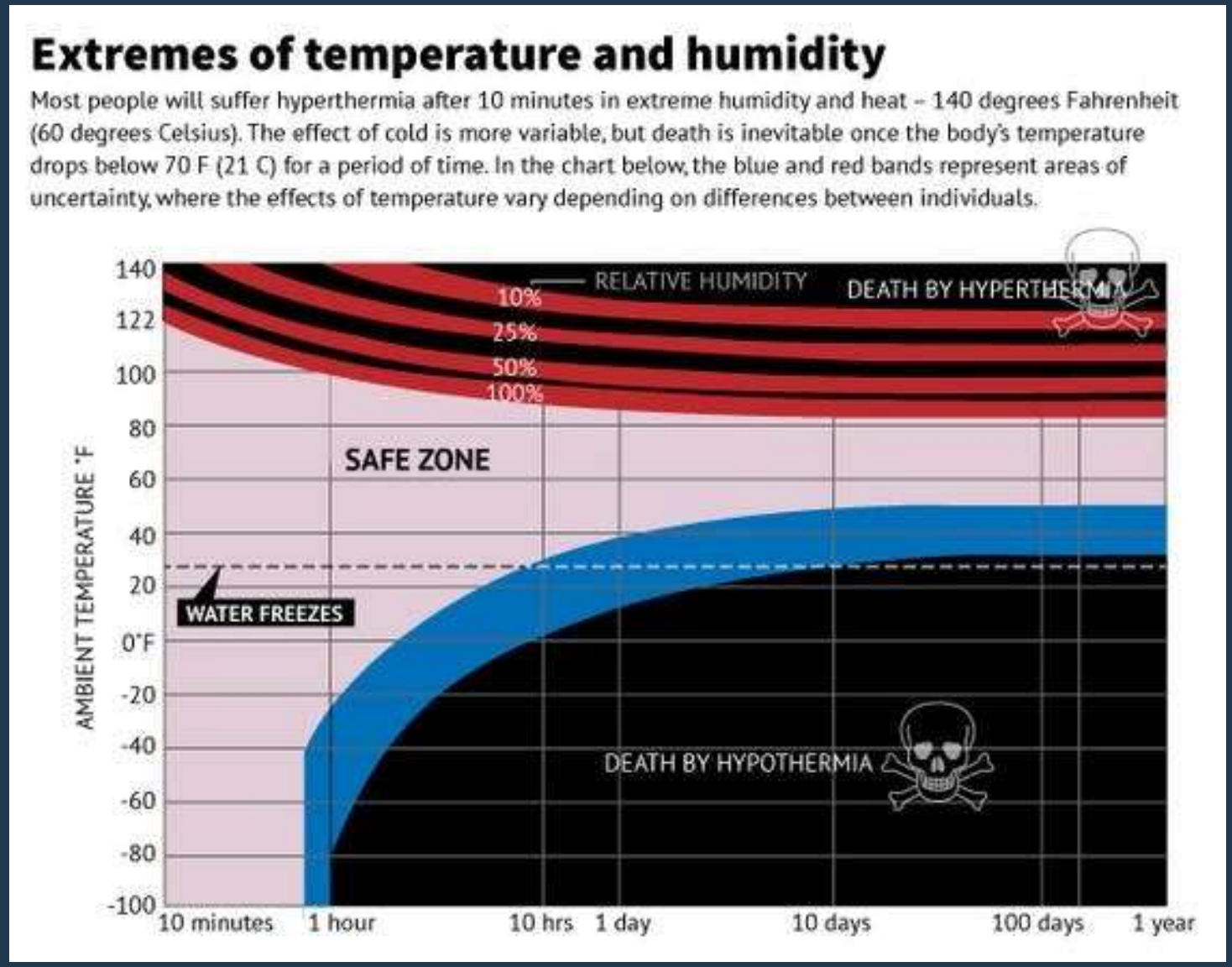


Impacts & Relevance

140°F = 60°C

Approx 4-30°C “safe zone” for humans

-100°F = -73°C

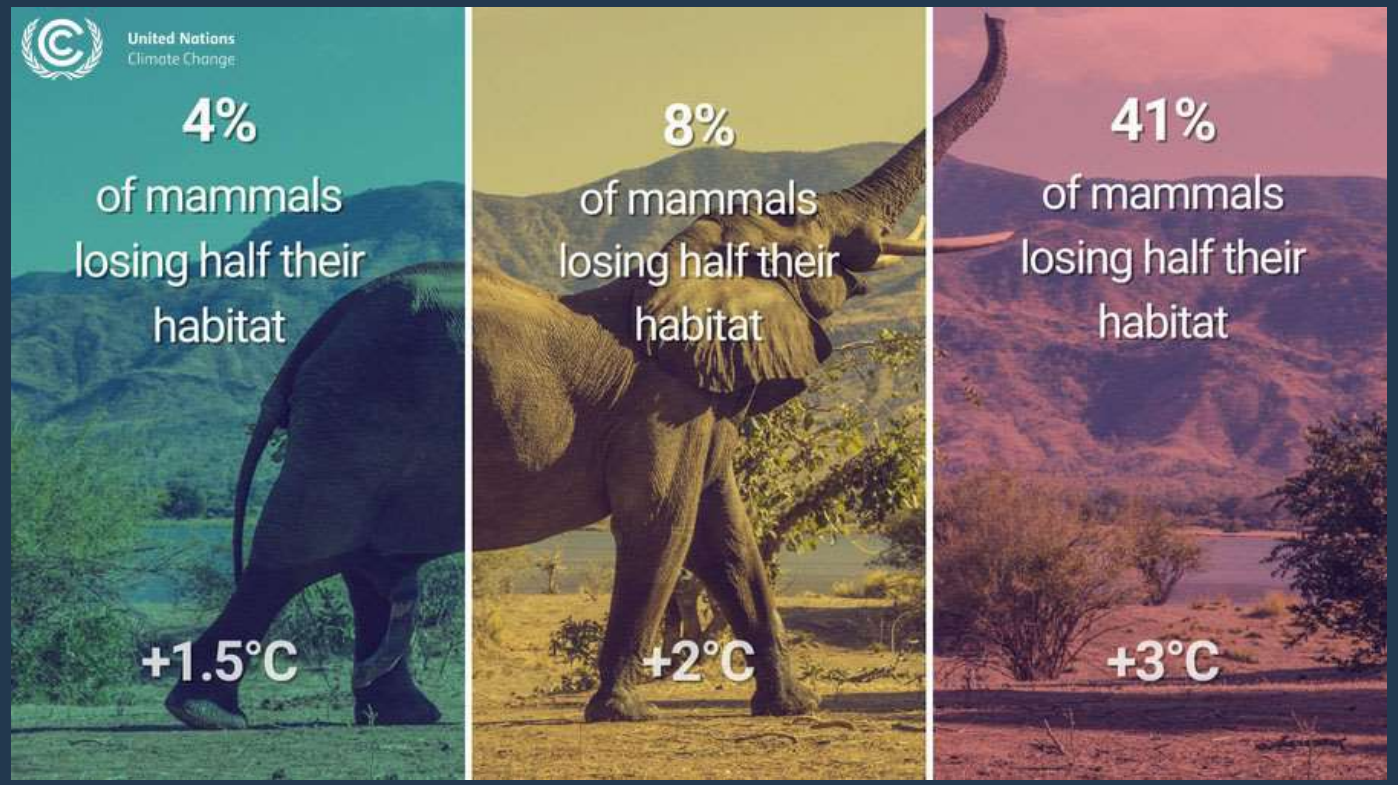


Furnace Creek - 55°C Death Valley, July 2023

Vostok Station – Antarctica, - 89.2°C, 1983

- Changes in climate affect habitats

- Humans can further exacerbate this by degrading habitat connectivity and restricting species movement


United Nations
Climate Change
4%
of mammals
losing half their
habitat
+1.5°C
8%
of mammals
losing half their
habitat
+2°C
41%
of mammals
losing half their
habitat
+3°C


+1.5°C
70 to 90% of coral reefs will vanish


+ 2° C
99% of coral reefs will vanish

Impacts & Relevance

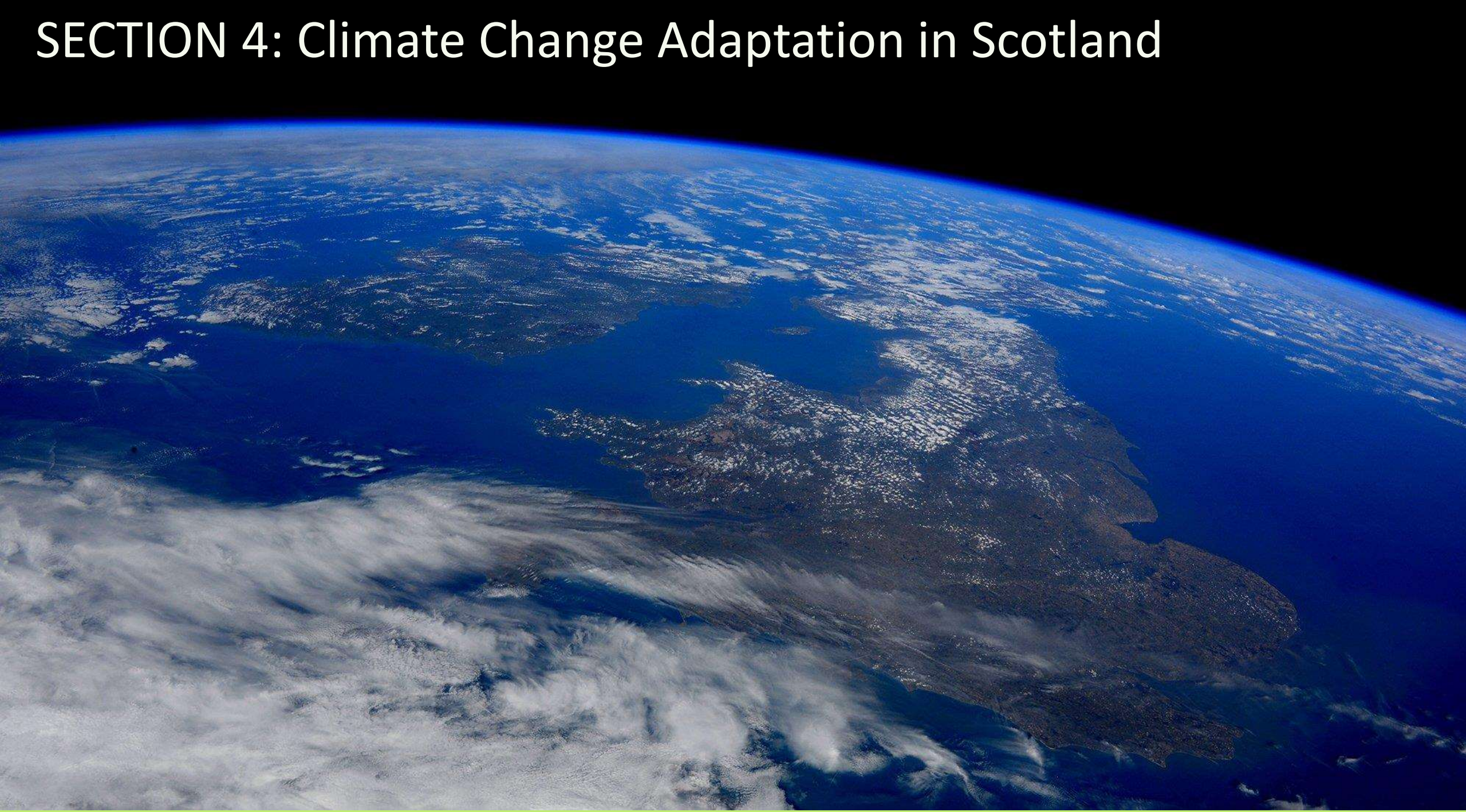
Direct Impacts of Climate Change

- **Flooding**
- **Drought**
- **Storms**
- **Heatwaves**

Other (Human) Factors

- **Habitat fragmentation**
- **Habitat degradation**
- **Habitat Loss**

SECTION 4: Climate Change Adaptation in Scotland



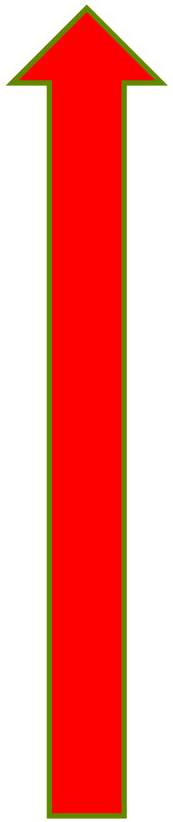
Climate Change (Scotland) Act 2009

Climate Change Adaptation Programmes

- Statutory
- Outcomes based
  - From UN SDGs
  - National Performance Framework

UK Risk Assessment

Risk Summary for Scotland



Flooding: river, surface water, coastal

Water scarcity

Heat waves

Extreme weather

https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA-Evidence-Report-Scotland-Summary-Final-1.pdf

NatureScot Green Infrastructure

European Union

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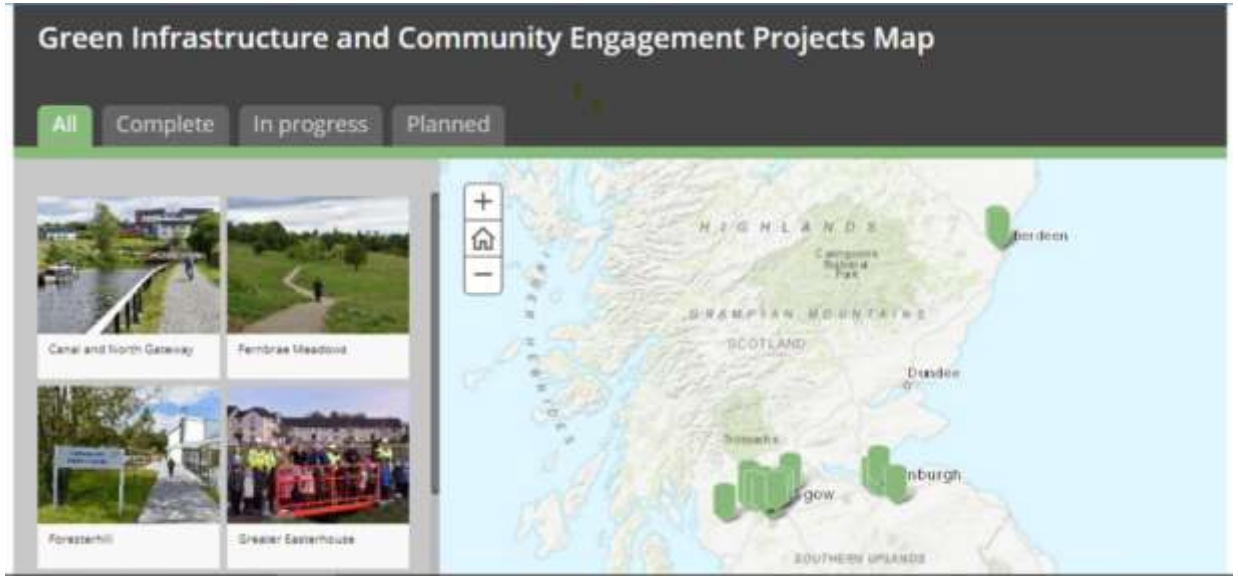
European Regional Development Fund
Investing in a Smart, Sustainable and Inclusive Future

The Green Infrastructure Fund

NatureScot
Green Infrastructure

- ERDF 2014-2020 programme
- £15m ERDF (originally)
- >£40m total investment
- Phase1 – 7 GIF and 11 GICEF projects (all LUPS)
- Phase 2 – 6 GIF (LUPS) & 1 GIF (H&I)



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Outcomes

- Nature, biodiversity and ecosystems
- Environmental quality, flooding and climate change
- Involving communities and increasing participation
- Increasing place attractiveness and competitiveness
- Improving health and wellbeing

ERDF Horizontal Themes

- Sustainable development
- Equal Opportunities and Non-Discrimination
- Equality between Men and Women

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Scottish Canals

Glasgow
CITY COUNCIL

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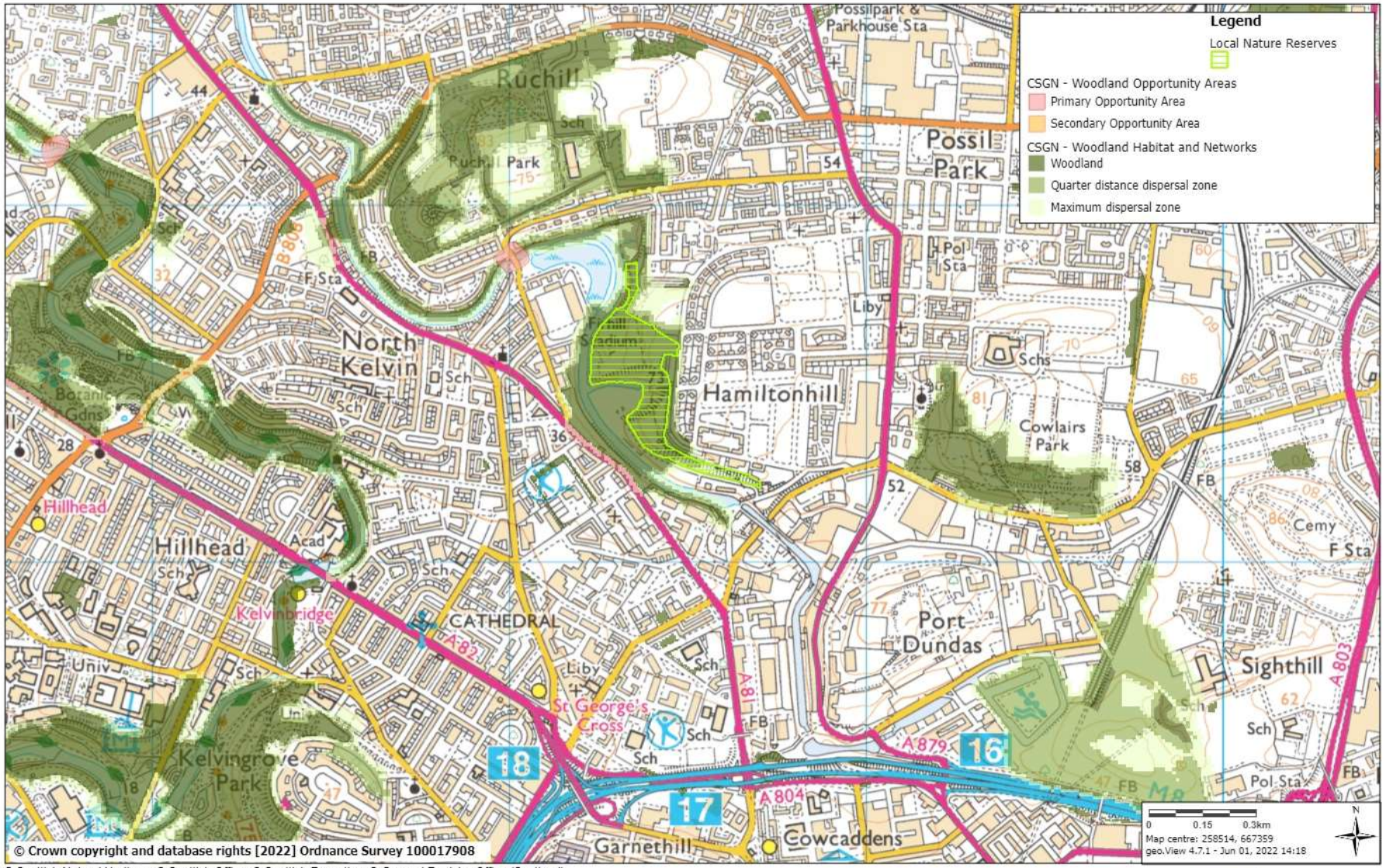
Before:

August 2009

After:
July 2018

https://www.youtube.com/watch?v=i5l2chUBMPY

Woodland network



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PEOPLE MAKE GLASGOW
GLASGOW

Adaptation Vs Mitigation

Mitigation

- Sustainable transportation
- Energy conservation
- Thermal mass / sinks for temperature regulation
- Insulation and heat recovery systems
- Renewable energy
- Energy & carbon efficient materials and products
- Improve vehicle fuel efficiency
- Capture and use landfill & digester gas

Both

- Geothermal
- Green roofs
- Solar thermal
- District heating
- Building design for natural light & ventilation
- Tree planting & care
- Local food production
- Water harvesting & conservation

Adaptation

- Infrastructure upgrades: SUDS, sewers & culverts
- Residential programs: sewer backflow & downspout disconnection
- Health programs and help for vulnerable people
- Emergency & business continuity planning
- Coastal and river bank protection and flood plain maintenance

Mitigation: the globally responsible thing to do

Actions that reduce the emissions that contribute to climate change.

Adaptation: the locally responsible thing to do

Actions that minimize or prevent the negative impacts of climate change.

Thank you

Any questions?

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0207 697 1977

info@supplychainschool.co.uk

supplychainschool.co.uk