CLIMATE IMPACTS ON PLACES

Current impacts | Set 1

A1 ICE WATER AND SEA LEVEL — CURRENT



Greenland

Warming melts land ice and speeds its loss to the ocean, reducing frozen water storage and raising global sea level.

270 billion tonnes of ice lost each year (2002-2023)

NASA | satellite observations 2002-2023

B1 CARBON STORES — CURRENT



Arctic tundra

Thaw exposes carbon in frozen soils to decomposition. Together with wildfire emissions, this has shifted the tundra from a carbon sink to a small net CO2 source.

From carbon sink to a small net CO2 source

NOAA | Arctic Report Card 2024

C1 EXTREME WEATHER AND DROUGHT — CURRENT



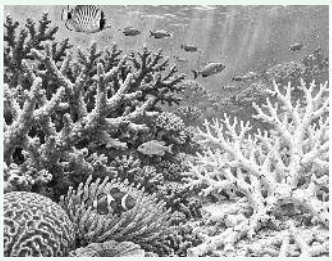
Thailand

In April 2023, extreme heat threatened health and increased electricity demand. Climate change made the Thailand-Laos regional humid heat event about 2.3°C hotter in heat-index terms.

45.4°C recorded in Tak on 15 April 2023

World Weather Attribution | April 2023 heatwave

D1 BIOMES HABITATS AND SPECIES — CURRENT



Great Barrier Reef Australia

Ocean heat caused widespread bleaching in 2024, damaging coral habitat. Regional coral cover fell in 2025, mainly from bleaching, with cyclones and other pressures contributing.

Regional coral cover down 14-31% in 2025

AIMS | surveys 2024-2025; not percentage points

E1 AGRICULTURE AND SOILS — CURRENT



Northwest India

Early heat in March-April 2022 reduced wheat yields in India's breadbasket. Human-caused warming made this regional heatwave about 30 times more likely.

2022 heatwave about 30 times more likely

World Weather Attribution | 2022 study

Colour identifies the impact type. CURRENT = observed; PREDICTED = projected.

Illustrative sketches, not photographs of the events. Source lines are clickable.

CLIMATE IMPACTS ON PLACES

Current impacts | Set 2

A2 ICE WATER AND SEA LEVEL — CURRENT



Swiss Alps Switzerland

Hot summers and low winter snowfall accelerated glacier melt. Smaller glaciers and collapsing glacier tongues show the loss of mountain freshwater storage.

10% of glacier volume lost in 2022-2023

Swiss Academy of Sciences and GLAMOS | 2023

B2 CARBON STORES — CURRENT



Southeastern Amazon Brazil

Aircraft measurements found a net ecosystem carbon source even after separating fire emissions. Warming and moisture stress interact with deforestation to weaken forest carbon storage.

More carbon released than absorbed

Gatti et al., Nature 2021 | observations 2010-2018

C2 EXTREME WEATHER AND DROUGHT — CURRENT



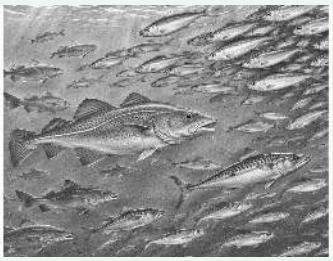
Amazon River Basin South America

High temperatures amplified water stress during the 2023 drought. Human-caused warming made this agricultural drought about 30 times more likely; low rivers isolated communities.

2023 agricultural drought about 30x more likely

World Weather Attribution | 2024 analysis

D2 BIOMES HABITATS AND SPECIES — CURRENT



North Sea Europe

Marine fish communities have shifted north as the sea warms. Changing distributions alter food webs and where fishing fleets can find their catch; other ecological factors also matter.

Fish community shifted north (1998-2020)

Gordó-Vilaseca et al., PeerJ 2023 | 1998-2020

E2 AGRICULTURE AND SOILS — CURRENT



England and Wales United Kingdom

Warmer growing seasons have helped expand wine-grape cultivation, changing where crops are viable. This creates opportunities, although frost and variable weather still threaten harvests.

Growing-season temperatures rose about 1°C*

Nesbitt et al. 2022 | *1981-2000 vs 1999-2018

Colour identifies the impact type. CURRENT = observed; PREDICTED = projected.

Illustrative sketches, not photographs of the events. Source lines are clickable.

CLIMATE IMPACTS ON PLACES

Predicted impacts | Future scenarios

A3 ICE WATER AND SEA LEVEL — PREDICTED



Kiribati Pacific Ocean

By the 2050s, parts of Kiribati could average around 65 high-tide flood days annually, compared with fewer than five now. Rising seas increase coastal inundation risk.

Some areas: ~65 flood days a year by the 2050s

NASA | 2024 projection; depends on local conditions

B3 CARBON STORES — PREDICTED



North Atlantic Ocean

Through this century, projected weakening of Atlantic overturning circulation would reduce heat and carbon uptake, weakening an important carbon-storage pathway.

Weaker circulation = reduced carbon uptake

IPCC AR6 WGI | Chapter 5; all SSPs: AMOC decline

C3 EXTREME WEATHER AND DROUGHT — PREDICTED



Mediterranean Basin

At 2°C or more of global warming above pre-industrial levels, droughts are projected to become more intense. Reduced rainfall and higher evaporation increase stress on rivers, soils and ecosystems.

More intense drought at 2°C+ global warming

IPCC AR6 WGI | Chapter 12; high-confidence drying

D3 BIOMES HABITATS AND SPECIES — PREDICTED



Antarctica

If present warming trends persist, over 90% of emperor penguin colonies are projected to be quasi-extinct by 2100: too small to remain viable. Loss of stable breeding sea ice is the key threat.

Over 90% of colonies at risk by 2100 if trends persist

British Antarctic Survey | 2023; conditional projection

E3 AGRICULTURE AND SOILS — PREDICTED



European Union and United Kingdom

Heavier rainfall could strip more fertile topsoil from farmland. Modelled mean water-erosion rates rise 13-22.5% by 2050 versus 2016 across low-to-high emissions scenarios; conservation can reduce losses.

Mean soil erosion rate up 13-22.5% by 2050

European Commission JRC | RCP2.6 to RCP8.5

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Illustrative sketches, not photographs of the events. Source lines are clickable.