



Climate Adaptation guidance in NPF4

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28th August 2025



The Adaptation Scotland programme is funded by the Scottish Government and delivered by Scottish charity Verture **venture**



Climate resilience

Climate resilience is the ability to anticipate, to prepare for and to respond to hazardous climate events, as well as climate vulnerabilities.

Climate change adaptation

Climate change adaptation comprises all the actions and solutions that a country, a region, a city or a community can develop and implement to build more resilient societies and economies, to respond to the impacts of climate change that are already happening, or are expected.

Scotland's changing climate



Scotland's **10 warmest years** on record have all occurred since 1997. The average temperature in the last decade (2014–2023) was **1.02°C warmer** than the 1961–1990 average, and the warmest year on record was **2022**⁴.



There has been an **increase in rainfall** over Scotland in the past few decades. The annual average rainfall in the last decade (2014–2023) was **10% wetter** than the 1961–1990 average, with winters **29% wetter**⁵.

Mean **sea level** around the UK has risen by approximately **18.5cm** from the start of the 20th century and the **rate of sea level rise has increased over the last 30 years, and continues to accelerate**⁶.



Since 2015 when storm naming convention began, Scotland has been impacted by at least **60 named storms** (when Met Office amber or red warnings for all/part of the UK are issued)⁷.

Scotland's changing climate

The changes in climate that we are already experiencing are projected to continue and intensify:



Average temperatures
will increase across
all seasons



Typical summers
will be warmer
and drier



Typical winters
will be milder
and wetter



Intense, heavy rainfall
events will increase in
both winter and summer



Sea levels
will rise



Reduced frost
and snowfall

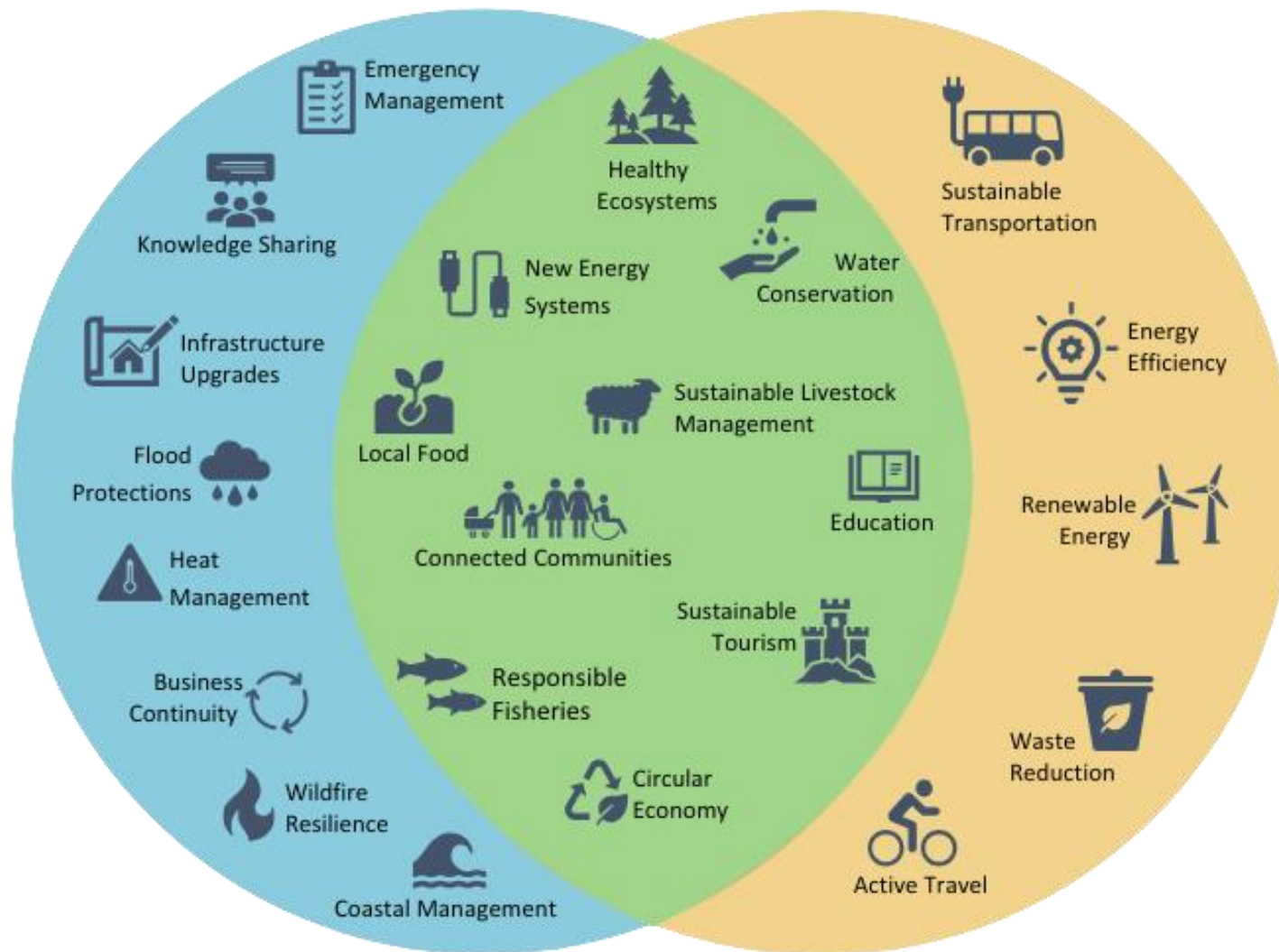


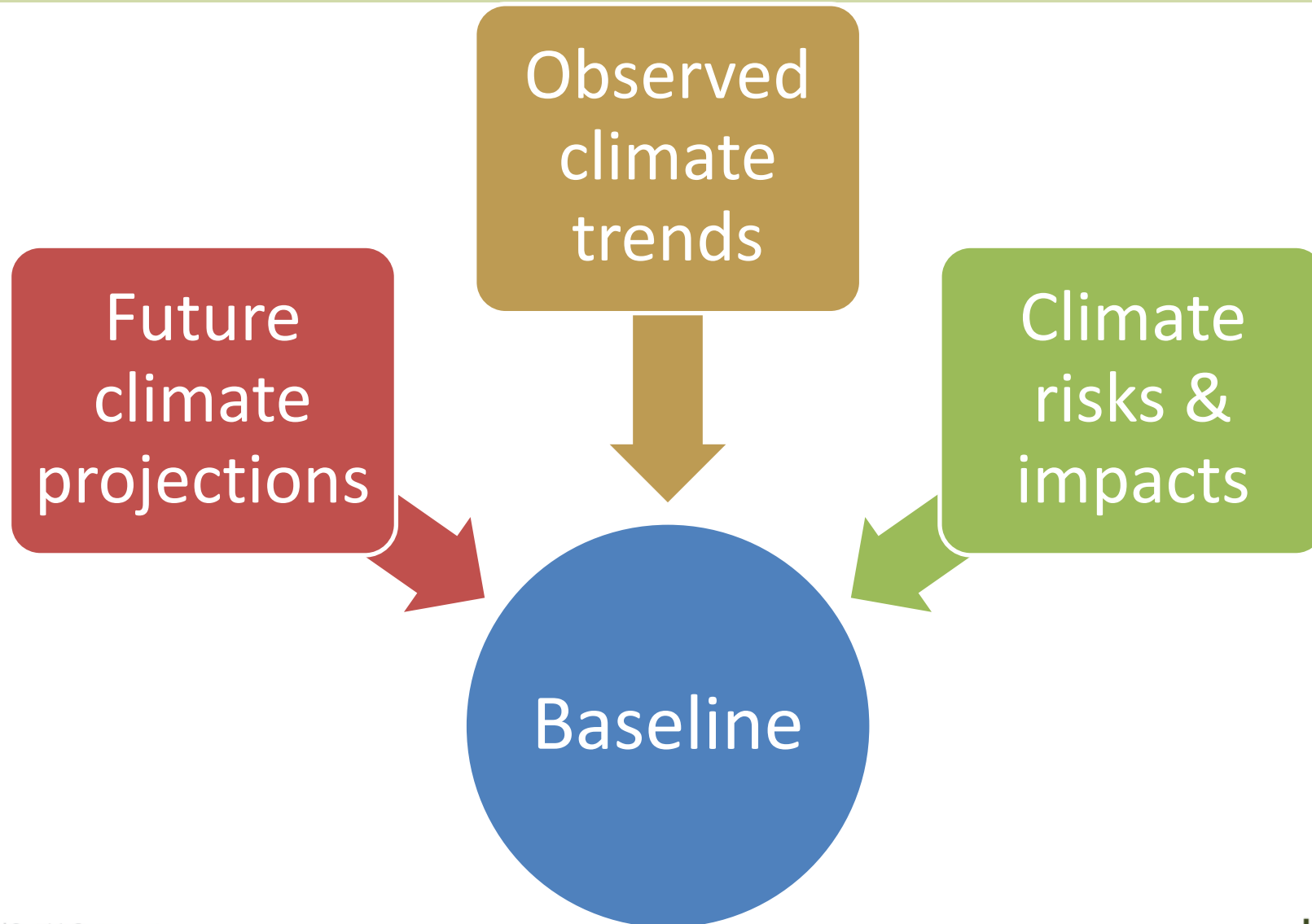
Weather will remain
variable and may become
more unpredictable

The amount of
change that occurs
will depend on how
successful we are
in reducing
greenhouse gas
emissions globally.

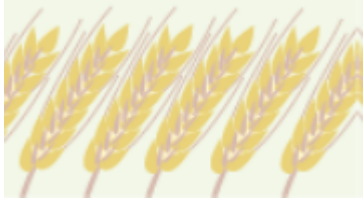


Adaptation and mitigation synergies





Climate impacts in Scotland



Agricultural
productivity



Spread of pests
and diseases



Damage to soil
health



Health & diversity
of nature



Food supply
security



Increased flood
risks



Coastal erosion
and change



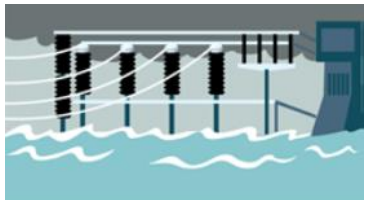
Health of marine
environments



Damage to
buildings



Human health
& wellbeing



Power supply
damage



Business
performance



Infrastructure
damage



Water availability
& quality



Loss of cultural
heritage



Regional Climate Risk & Opportunities Assessments

INTERACTIVE INDEX CLIMATE RISK AND OPPORTUNITY

ClimateReadyClyde

Climate Ready Clyde's climate risk and opportunity assessment has identified 70 risks and opportunities that are of strategic importance for Glasgow City Region. Using our interactive index, you can explore risks and opportunities by theme, urgency score and hazard. You can then easily jump to detailed information for each risk or opportunity.

The climate risks and opportunities from the assessment are split into six themes: infrastructure, built environment, society and health, natural environment, economy business and industry, and international risks and opportunities, and cross cutting and adaptive capacity issues.

Whilst all themes have a significant number of climate change risks, the final numbers of risks and opportunities are also in part due to the varying size and scale of the themes themselves.

On their own, these numbers does not provide an indication of the overall magnitude of risks for a theme. These instead are based on exposure, the adaptation shortfall and whether there are further benefits to early action now.

34 of the 70 risks and opportunities have been classified as either 'more action needed' or 'build understanding and capacity' – meaning that further action is needed in the next five years to ensure the city region manages them to the end of the century. Building understanding and capacity was the need in the majority of cases, with a more limited set of risks needing more immediate action.

Figure 1. Number of climate change risks and opportunities for Glasgow City Region by urgency score

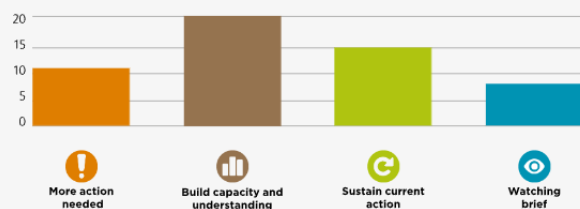
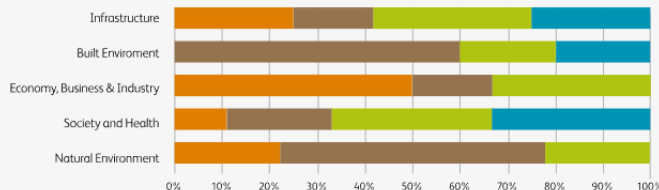
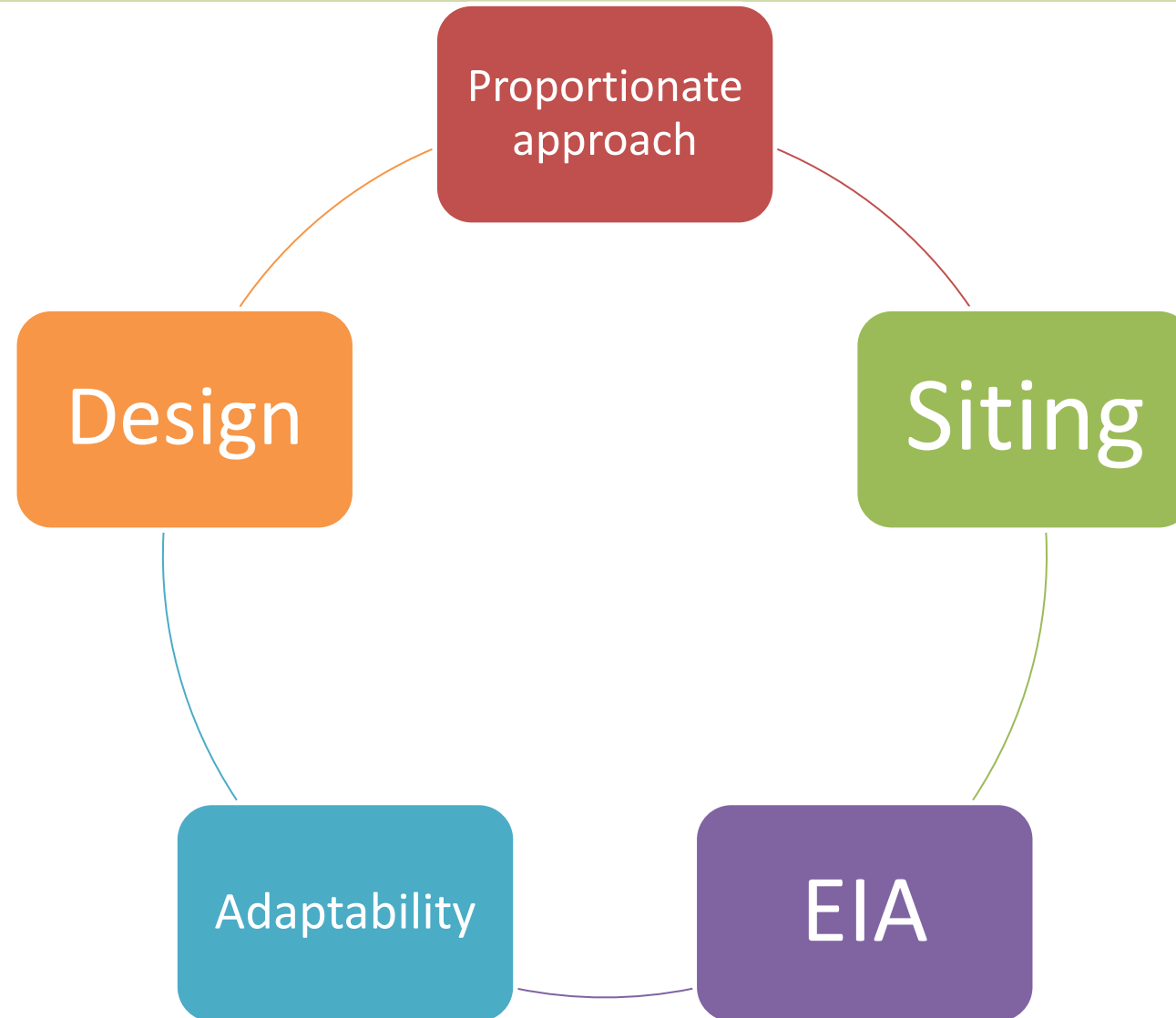


Figure 2. Spread of climate change risks and opportunities by urgency score and theme

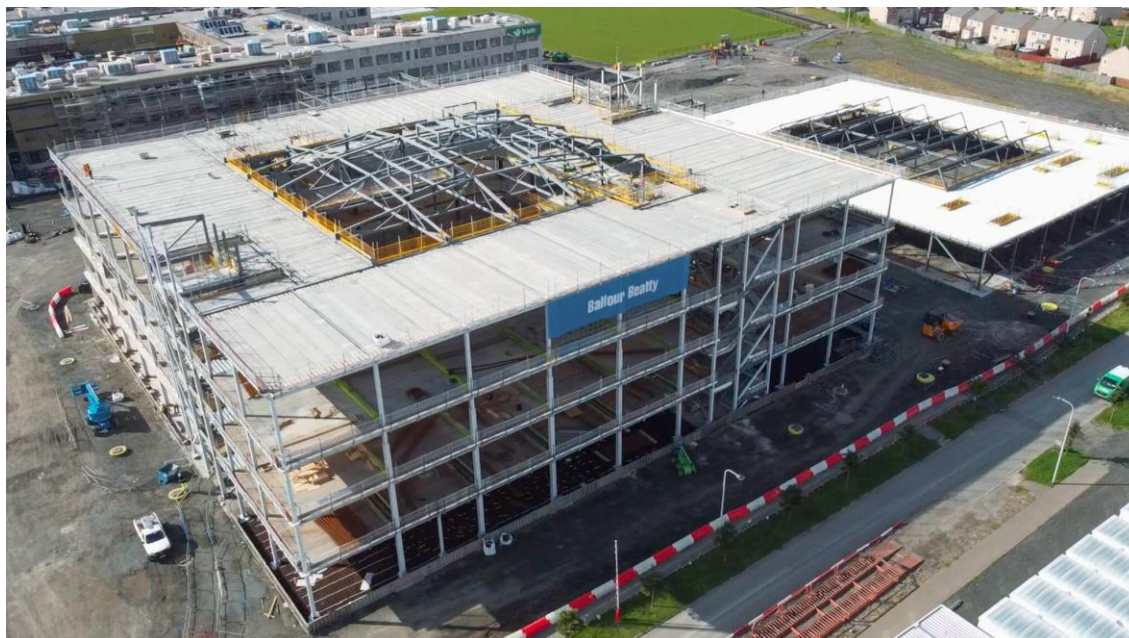


Health, communities and built environment

Risk	Current level of risk (2024)	Future level of risk (2080, 4°C)	Are the risks going to be managed?	Edinburgh and South East Scotland Urgency score	Priority for regional collaboration?
H01: Risks to health and wellbeing from high temperatures and wildfire	High	High	No	More action needed	Yes
H02: Opportunities for health and wellbeing from higher temperatures	Low	Medium	Partially	Further investigation	No
H03: Risks to people, communities and buildings from flooding	High	High	Partially	More action needed	Yes (top priority)
H04: Risks to people, communities and buildings from sea level rise, storm surge and coastal change	Medium	High	Partially	More action needed	Yes
H05: Risks to building fabric	Medium	Medium	Very partially	More action needed (private sector) Sustain current action (public sector)	Yes
H06: Risks and opportunities from summer and winter household energy demand (a) Opportunity – winter, (b) Risk – summer	Low / Low	High / Low	No	Further investigation	Np
H07: Risks to health and wellbeing from changes in air quality	High	Medium	Partially	Sustain current action (outdoor air quality) Further investigation (indoor air quality)	No
H08: Risks to health from vector-borne diseases	Low	Medium	Partially	Sustain current action	No
H09: Risks to food safety and food security	High	High	Partially	More action needed	Yes
H10: Risks to health from water quality and household water supply	Medium/ Low	Medium / Medium	Partially	Further investigation	No
H11: Risks to cultural heritage	Medium	High	Partially	More action needed	No
H12: Risks to health and social care delivery	Medium	Medium	Partially	More action needed	Yes
H13: Risks to services and buildings for vulnerable population groups (education, care and prison sites)	Medium	Medium	No	More action needed	No



Example – Dunfermline Learning Campus, Fife College



Adaptation Scotland

supporting climate change resilience



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adaptation.scot



Scottish Government
Riaghaltas na h-Alba
gov.scot

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