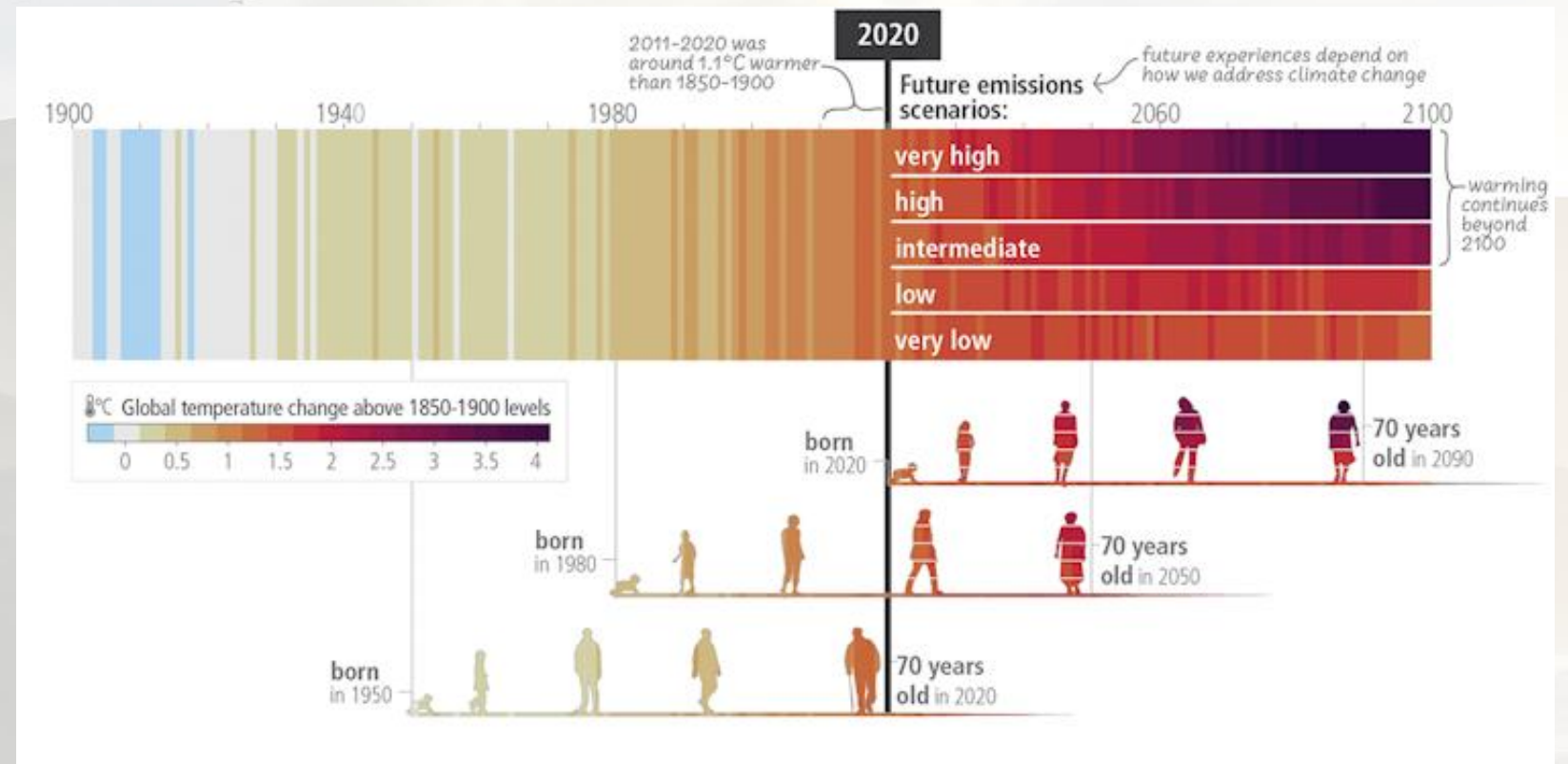


The impacts of climate change on the Isle of Man: Risks and Opportunities

Global outlook



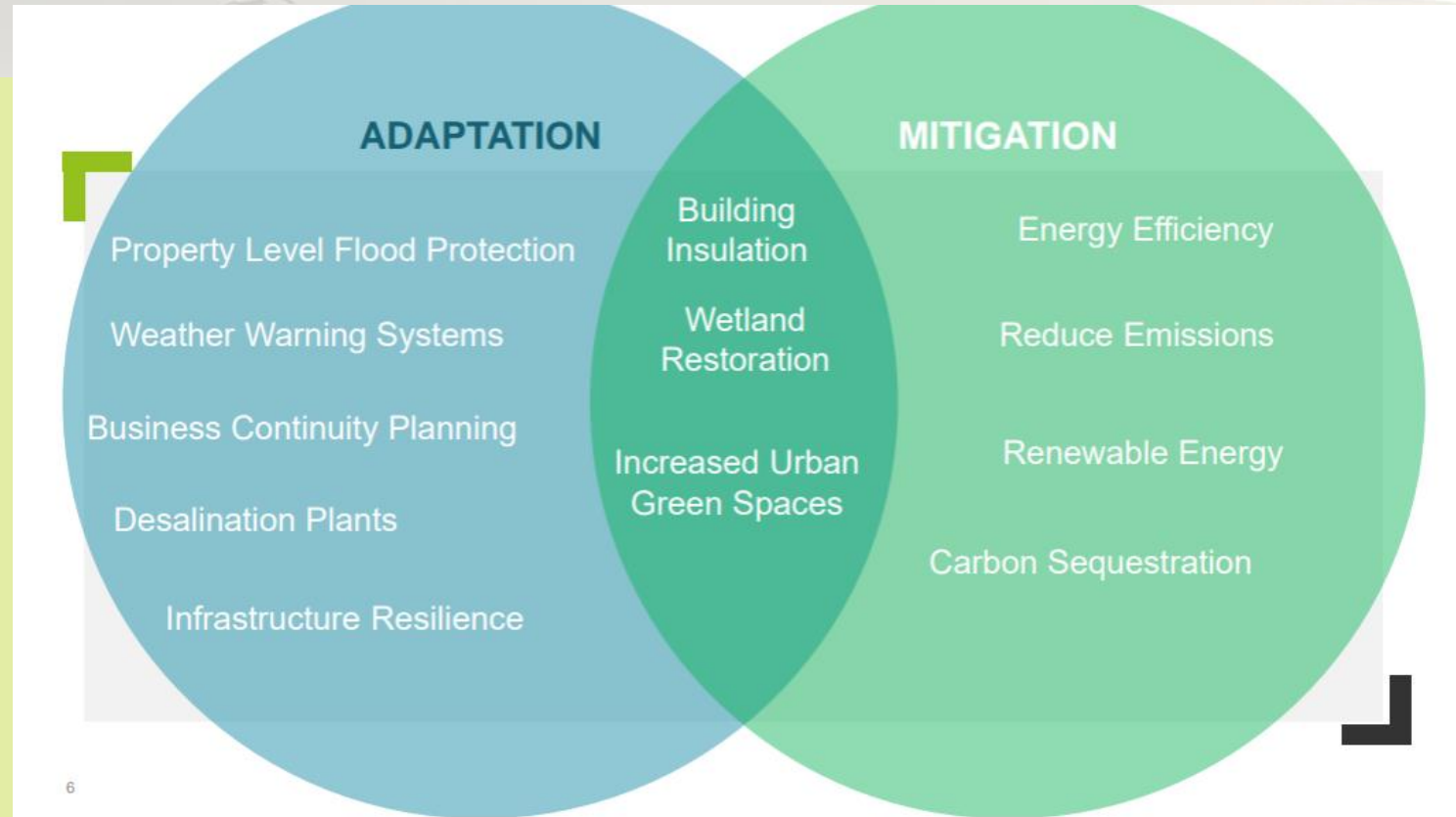
'In the near term, every region in the world is projected to face further increases in climate hazards, increasing multiple risks to ecosystems and humans' – IPCC Climate Change 2023

Local context – Why assess?

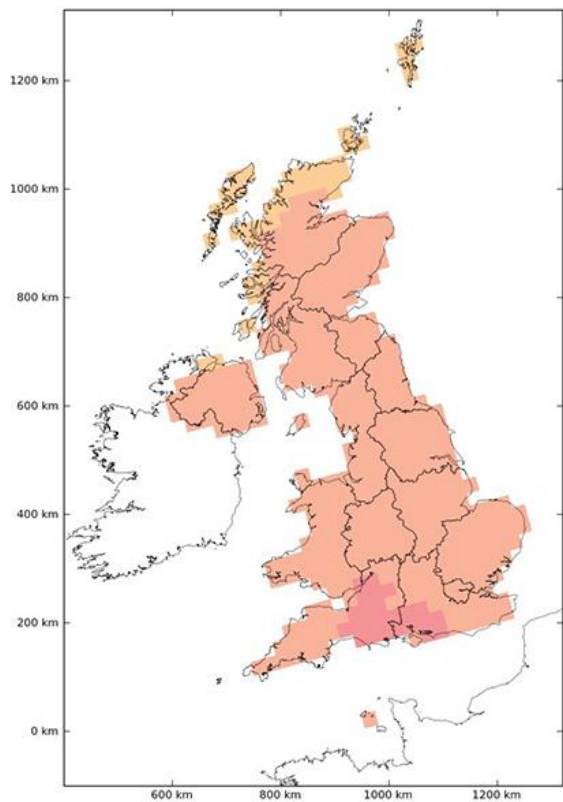
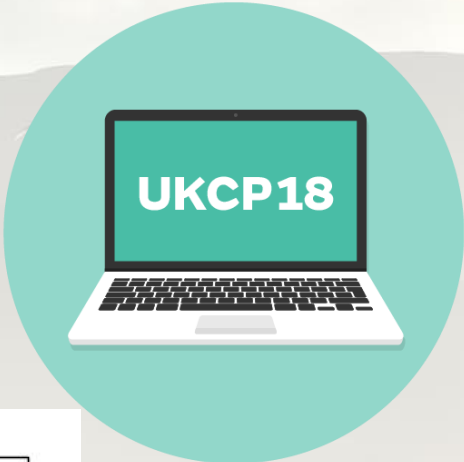
Climate Change Plan 22-27

A.5 Obtain an independent Climate Risks and Opportunities assessment

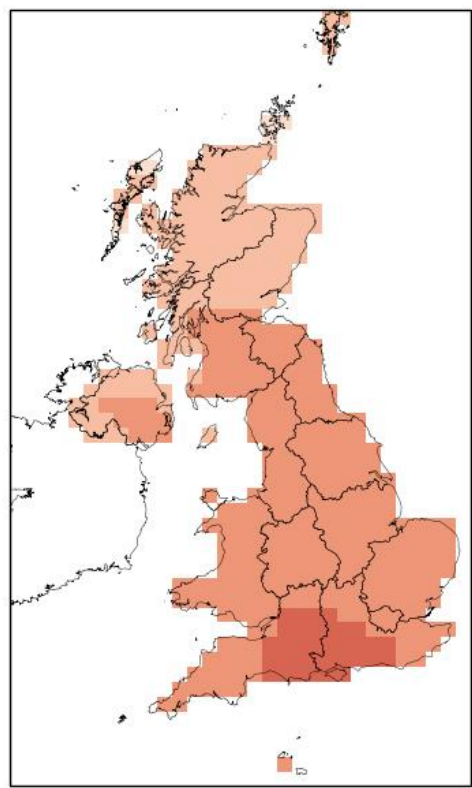
A.1 Deliver an Adaptation Strategy, taking account of climate impacts, across all areas of society, economy and the natural environment.



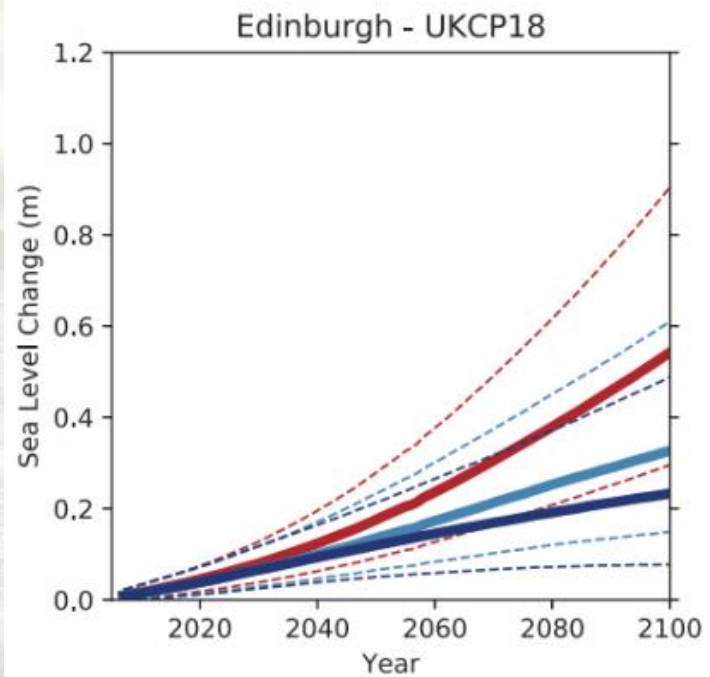
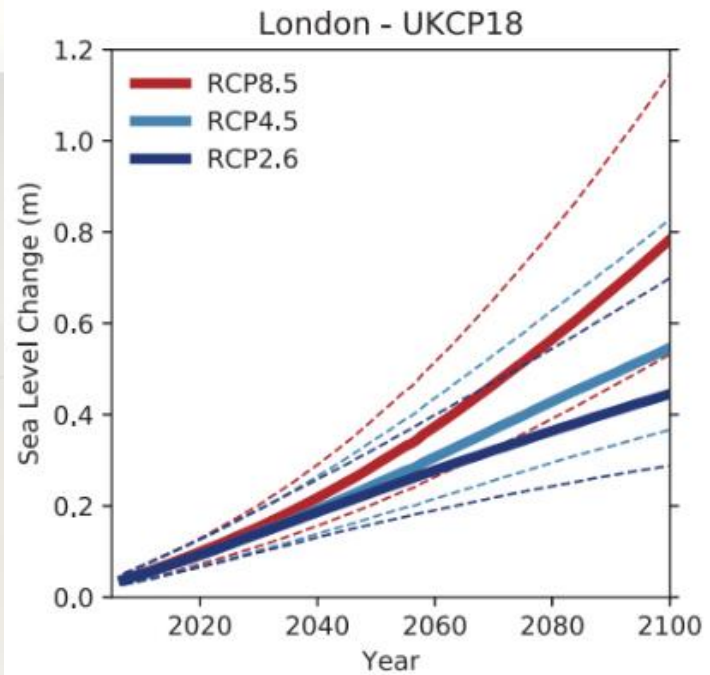
Climate Models



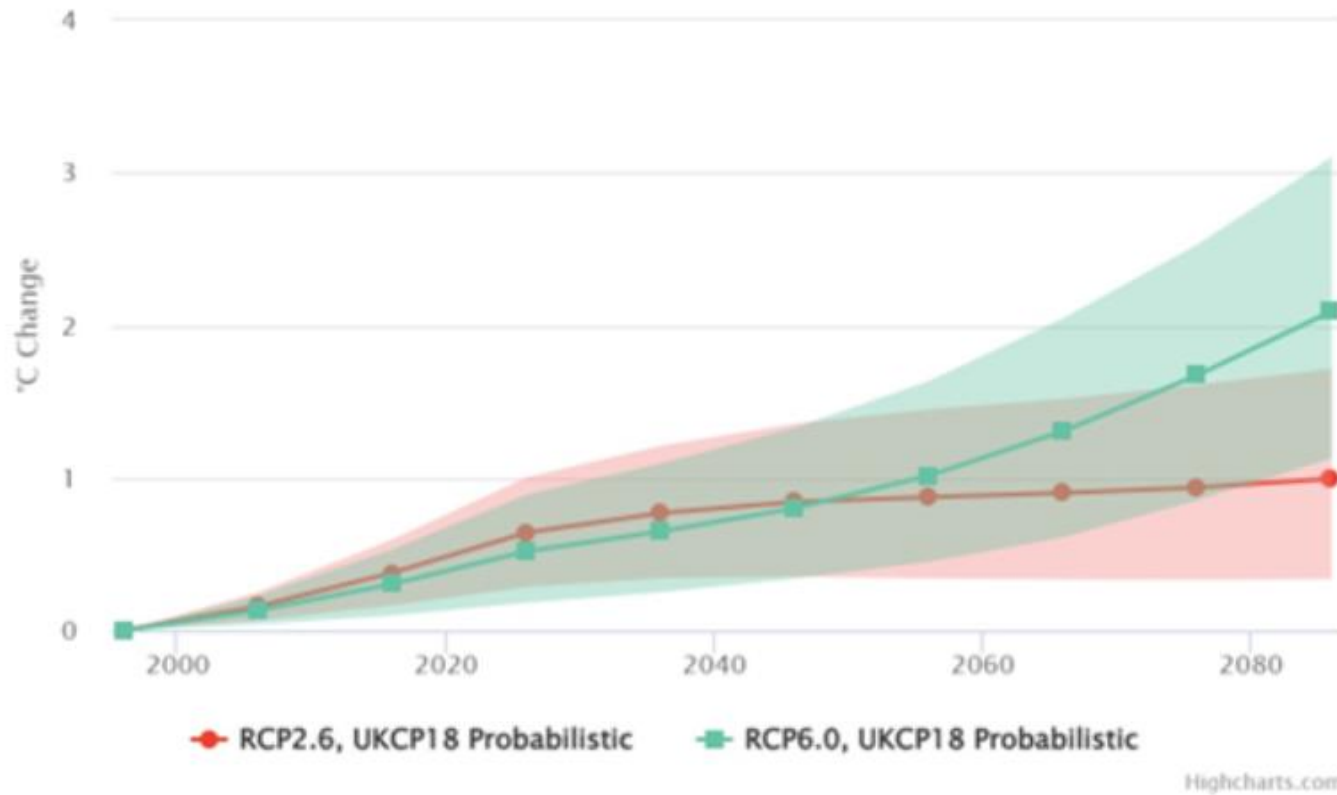
Change in mean temperature (deg C)



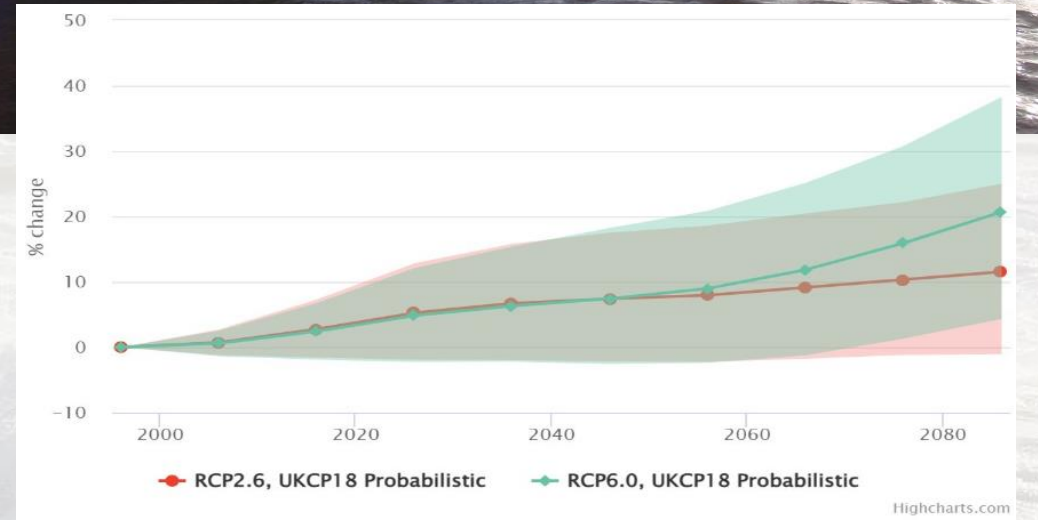
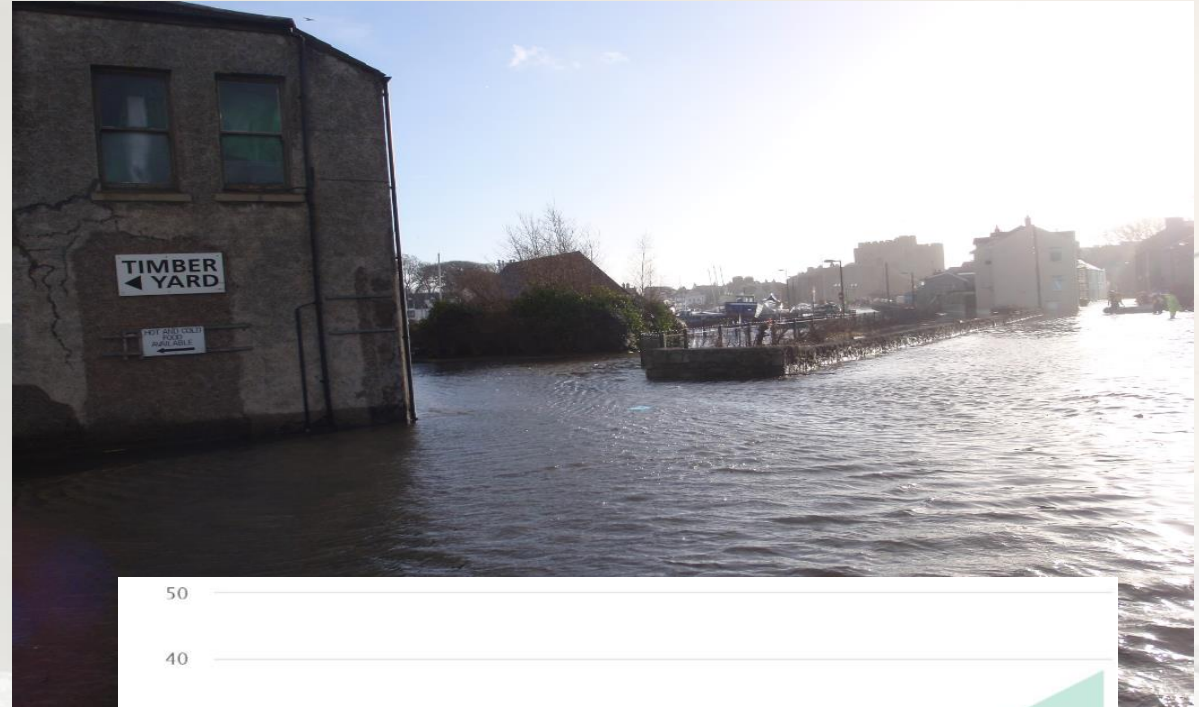
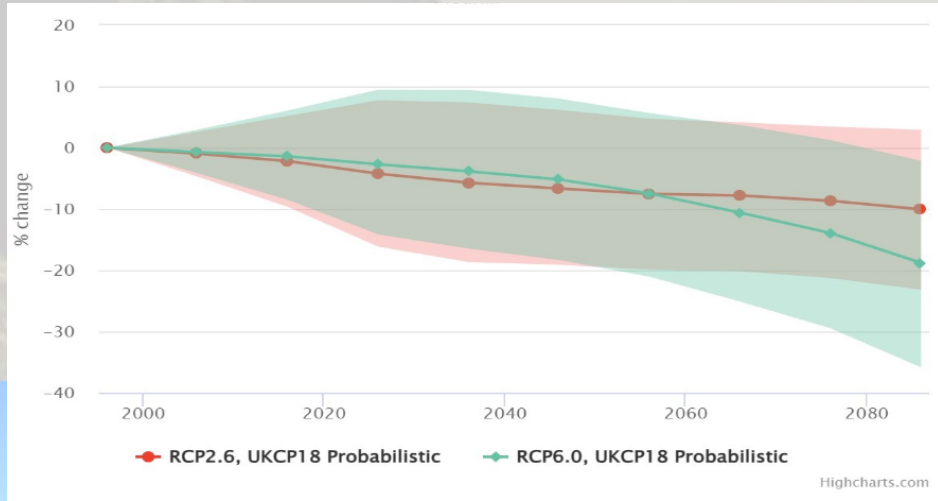
Mean air temperature anomaly at 1.5m (°C)



Isle of Man Temperature



Isle of Man Rainfall



Isle of Man Sea level rise



Climate variable	2030s		2040s		2050s		2060s		2070s		2080s		T r e n d
	2°C	4°C	2°C	4°C	2°C	4°C	2°C	4°C	2°C	4°C	2°C	4°C	
Sea level rise in Douglas (m)	0.10 <i>(0.05 to 0.15)</i>	0.11 <i>(0.07 to 0.16)</i>	0.13 <i>(0.07 to 0.20)</i>	0.16 <i>(0.10 to 0.23)</i>	0.16 <i>(0.09 to 0.26)</i>	0.22 <i>(0.13 to 0.32)</i>	0.19 <i>(0.10 to 0.31)</i>	0.29 <i>(0.17 to 0.43)</i>	0.22 <i>(0.12 to 0.37)</i>	0.36 <i>(0.22 to 0.55)</i>	0.25 <i>(0.13 to 0.43)</i>	0.44 <i>(0.27 to 0.68)</i>	↑

Projected climate changes on the Isle of Man

(mean values)

Today

(1981 - 2000 baseline)

2050s 2°C

of global warming

2080s 2°C

of global warming

2080s 4°C

of global warming

Change in average temperature

Annual 9.1°C
Summer 13.7°C
Winter 4.9°C



+1°C
+1.3°C
+0.7°C



+1°C
+1.3°C
+0.9°C



+1.9°C
+2.4°C
+1.6°C

Change in average highest summer temperature

17.0°C



+1.3°C



+1.4°C



+2.5°C

Change in average rainfall

Annual 1252mm
Summer 238mm
Winter 366mm



+3%



-9%



+11%



+4%



-10%



+14%



+5%



-17%



+21%

Sea level rise in Douglas

+0.16 metres

+0.25 metres

+0.44 metres

Determining risks

2020s
(Present day)

2050s
(2°C)

2080s
(2°C)

2080s
(4°C)

Now-----Near Future-----Hope-----Plan

Sector	No. Risks	No. Opportunities
Natural environment	18	7
Health and communities	17	2
Infrastructure	70	0
Economy	8	3
International dimensions	6	2
Total	119	14

Hope for 2°C and plan for 4°C – UK Climate Change Committee advice

Scoring risks

$$\text{Risk Score} = \text{Magnitude Score} \times \text{Likelihood Score}$$

Risk Rating Matrix		Magnitude of potential consequences				
		Very Low	Low	Medium	High	Very High
Likelihood (levels of probability)	Very Likely	Moderate	Major	Major	Severe	Severe
	Likely	Moderate	Moderate	Major	Major	Severe
	Possible	Minor	Moderate	Moderate	Major	Major
	Unlikely	Minor	Moderate	Moderate	Moderate	Major
	Highly Unlikely	Negligible	Minor	Minor	Moderate	Moderate

		Severity of impacts			
Risk rating		2020s (Present day)	2050s (2°C)	2080s (2°C)	2080s (4°C)
Impacts evaluated for the IOM	Severe	6	15	22	32
	Major	18	27	31	42
	Moderate	46	55	49	30
	Minor	22	10	12	10
	Negligible	27	12	5	5

119

Impacts evaluated for the IOM

Isle of Man Severe Risks

Risk ID#	IoM risk description	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R116	Risks to marine species and habitats from changing climatic conditions, including ocean acidification and higher water temperatures.	[5] Severe	[5] Severe	[5] Severe	[5] Severe

Risk ID#	Impacts to IOM energy infrastructure and networks (i.e. Power Station)	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R50	Risk of extreme rainfall and river, surface water and groundwater flooding	[5] Severe	[5] Severe	[5] Severe	[5] Severe

Isle of Man

Increasing Risks

Risk ID#	Impacts to health and communities on the IOM	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R12	Risks to people, communities and buildings from coastal flooding and erosion and sea level rise	[3] Moderate	[3] Moderate	[4] Major	[5] Severe

Risk ID#	Impacts to IOM water infrastructure	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R87	Risk of drought and water scarcity	[3] Moderate	[4] Major	[4] Major	[5] Severe

Isle of Man Stable Risks

Risk ID#	Impacts to IOM highways and transport infrastructure	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R74	Risk of subterranean and surface subsidence	[1] Negligible	[1] Negligible	[1] Negligible	[1] Negligible

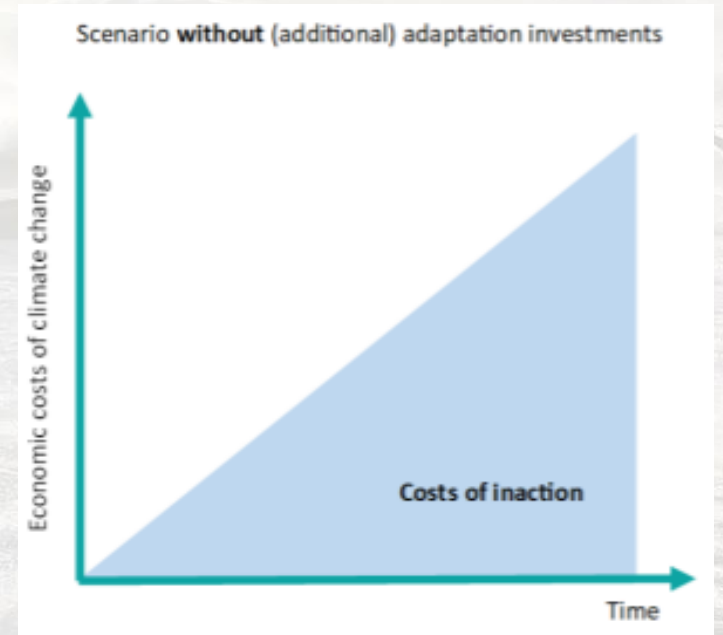
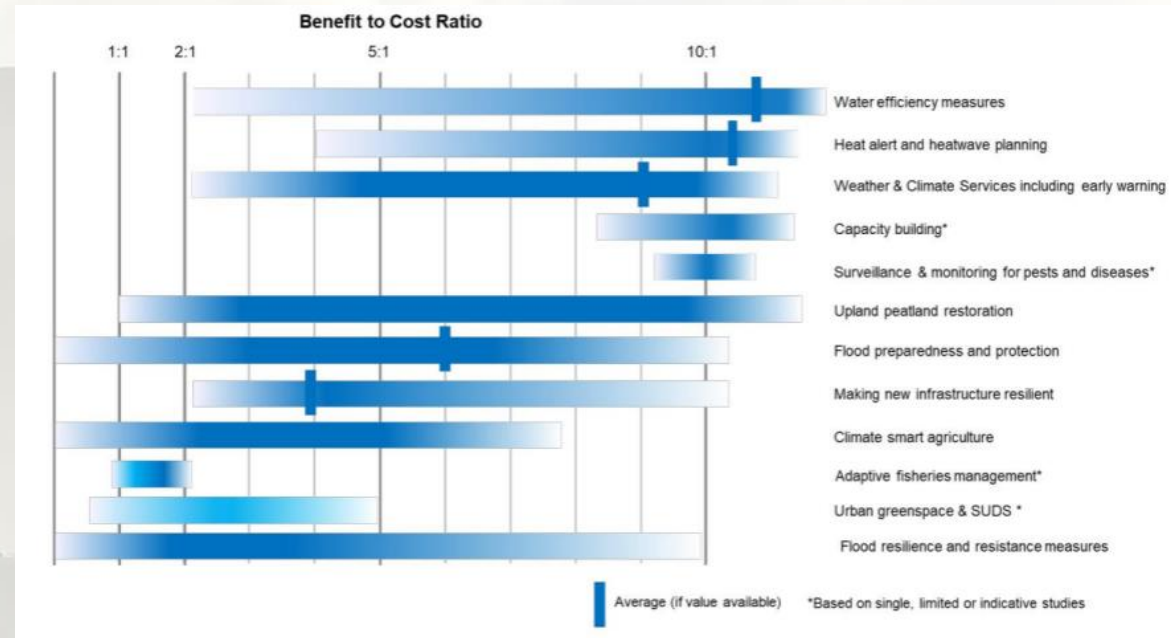
Risk ID#	Impacts to IOM air travel infrastructure (i.e. Ronaldsway Airport)	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
R30	Risk of extreme rainfall and river, surface water and groundwater flooding	[3] Moderate	[3] Moderate	[3] Moderate	[3] Moderate

Isle of Man Opportunities

Opportunity ID#	IoM opportunity description	2020s (Present day)	2050s 2C	2080s 2C	2080s 4C
001	Opportunities for tourism from hotter, drier summers and milder winters	Major	Major	Major	Major
007	Opportunities to the Isle of Man from climate-related international human mobility	Negligible	Minor	Moderate	Major
011	Opportunities for fisheries and aquaculture productivity from changing climatic conditions (including sea temperature change etc.)	Moderate	Moderate	Major	Major

Next steps

- Review of current adaptation plans
- Assessment of adaptation extent
- Benefit to Cost Ratio
- Recommended next steps for adaptation action





Thank You

NET ZERO 

ISLE OF MAN