Climate Change Baseline and Projection Data

Climate Change Baseline and Projection under Representative Concentration Pathways 8.5

Climate Variable	Baseline 1981-2020	Emissions Scenario	Climate change projection period			Projected Trend	Data Source	Modelling Source	Data Resolution
			2021-2050	*2041-2070*	*2071-2100*				
Temperature									
Minimum annual air temperature at 1.5 m (°C)	**7.4**	RCP8.5	8.5 (7.9 to 9.1)	9.4 (8.4 to 10.4)	11.2 (9.5 to 12.9)	↑	UK CRI	UKCP18	12km
Mean annual air temperature at 1.5 m (°C)	**11.2**	RCP8.5	12.4 (11.8 to 13)	13.3 (12.4 to 14.3)	15.2 (13.6 to 16.9)	↑	UK CRI	UKCP18	12km
Maximum annual air temperature at 1.5 m (°C)	**15.0**	RCP8.5	16.3 (15.7 to 17)	17.3 (16.2 to 18.3)	19.2 (17.5 to 21)	↑	UK CRI	UKCP18	12km
Minimum ***winter*** air temperature at 1.5 m (°C)	**-11.6**	RCP8.5	-10.6 (-11.4 to -9.6)	-9.8 (-11.1 to -8.3)	-8.3 (-10.4 to -6)	↑	UK CRI	UKCP18	12km
Maximum ***summer*** air temperature at 1.5 m (°C)	**37.1**	RCP8.5	38.9 (37.6 to 40)	40.2 (38.5 to 42.1)	43.1 (40 to 46.3)	↑	UK CRI	UKCP18	12km
Days with maximum temperature >35°C (days/year)	**0.1**	RCP8.5	**0.4** (0.2 to 1.2)	**1.6** (0.3 to 4.8)	**7.8** (1.4 to 25.8)	↑	UK CRI	UKCP18	12km
Days with maximum temperature >30°C (days/year)	**3.0**	RCP8.5	**7.6** (4.2 to 12.6)	**13.8** (6.4 to 28.4)	**38.1** (13.7 to 69.3)	↑	UK CRI	UKCP18	12km
Days with maximum temperature >25°C (days/year)	**24.0**	RCP8.5	**42.1** (30.2 to 56.4)	**60.6** (39.0 to 83.2)	**94.3** (59.5 to 123)	↑	UK CRI	UKCP18	12km
Met Office heatwave events each year (events/year)	**0.8**	RCP8.5	**2.0** (1.1 to 3.1)	**3.4** (1.7 to 5.0)	**4.9** (3.2 to 6.3)	↑	UK CRI	UKCP18	12km
Frost days each year <0°C (days/year)	**35.6**	RCP8.5	**24.9** (19.7 to 32.3)	**18.6** (10.9 to 28.1)	**10.2** (3.5 to 22.1)	↓	UK CRI	UKCP18	12km
Rainfall									
Mean annual rainfall (mm)	**619**	RCP8.5	626 (586 to 666)	614 (567 to 664)	609 (543 to 681)	↓	UK CRI	UKCP18	12km
Mean summer rainfall (mm)	**142**	RCP8.5	130 (107 to 153)	116 (87 to 144)	92 (57 to 131)	↓	UK CRI	UKCP18	12km
Mean winter rainfall (mm)	**178**	RCP8.5	190 (173 to 209)	197 (173 to 226)	216 (178 to 263)	↑	UK CRI	UKCP18	12km
SPI Drought (proportion of time)	**7%**	RCP8.5	**8%** (6% to 12%)	**10%** (7% to 16%)	**16%** (8% to 27%)	↑	UK CRI	UKCP18	12km
Wettest month on average (mm)	**October (69.1)**	RCP8.5	December (114)	January (119)	January (112)	↑	UK CRI	UKCP18	12 km
Driest month on average (mm)	**February (41.5)**	RCP8.5	September (45.3)	September (33.6)	July (32.9)	↓	UK CRI	UKCP18	12 km
Wet days (>20mm) (days/yr)	**2.3**	RCP8.5	2.7	3.1	3.3	↑	UKCP UI	UKCP18	12 km
Very wet days (>30mm) (days/yr)	**0.6**	RCP8.5	0.6	0.8	0.9	↑	UKCP UI	UKCP18	12 km
Summer dry days (5 consecutive days < 1 mm) (days/yr)	**30.5**	RCP8.5	21.7	23.9	27.6	↓	UKCP UI	UKCP18	12 km
Highest daily precipitation rate (mm/day)	**49.2**	RCP8.5	46.3	67.3	67.3	↑	UKCP UI	UKCP18	12 km
Other									
Met Office fire danger (days/year)	**37.1**	RCP8.5	**54.1** (38.7 to 72.3)	**69.1** (45.6 to 93.4)	**96.3** (60.6 to 127)	↑	UK CRI	UKCP18	12 km

Climate Change Baseline and Projection under Representative Concentration Pathways 4.5

Climate Variable	Baseline 1981-2010	Emissions Scenario	Climate change projection period			Projected Trend	Data Source	Modelling Source	Data Resolution
			2021-2050	*2041-2070*	*2071-2100*				
Temperature									
Minimum annual air temperature at 1.5 m (°C)	**7.4**	RCP4.5	8.2 (7.7 to 8.8)	8.8 (8 to 9.6)	9.6 (8.6 to 10.8)	↑	UK CRI	UKCP18	12 km
Mean annual air temperature at 1.5 m (°C)	**11.2**	RCP4.5	12.1 (11.6 to 12.7)	12.7 (11.9 to 13.5)	13.6 (12.5 to 14.7)	↑	UK CRI	UKCP18	12 km
Maximum annual air temperature at 1.5 m (°C)	**15.0**	RCP4.5	16 (15.5 to 16.7)	16.6 (15.8 to 17.4)	17.5 (16.4 to 18.7)	↑	UK CRI	UKCP18	12 km
Minimum ***winter*** air temperature at 1.5 m (°C)	**-11.6**	RCP4.5	-10.8 (-11.5 to -9.9)	-10.3 (-11.3 to -9.2)	-9.6 (-11.1 to -8)	↑	UK CRI	UKCP18	12 km
Maximum ***summer*** air temperature at 1.5 m (°C)	**37.1**	RCP4.5	38.5 (37.5 to 39.5)	39.2 (37.9 to 40.7)	40.8 (38.6 to 42.9)	↑	UK CRI	UKCP18	12 km
Days with maximum temperature >35°C (count)	**0.1**	RCP4.5	**0.3** (0.1 to 0.8)	**0.6** (0.2 to 2.2)	**2.2** (0.3 to 6.6)	↑	UK CRI	UKCP18	12 km
Days with maximum temperature >30°C (count)	**3.0**	RCP4.5	**6.1** (3.8 to 9.8)	**8.7** (4.8 to 16.3)	**16.6** (6.8 to 34.6)	↑	UK CRI	UKCP18	12 km

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Climate Variable	Baseline 1981-2010	Emissions Scenario	Climate change projection period			Projected Trend	Data Source	Modelling Source	Data Resolution
			2021-2050	*2041-2070*	*2071-2100*				
Days with maximum temperature >25°C (count)	**24.0**	RCP4.5	**37.3** (28.3 to 49.0)	**47.6** (32.3 to 66.0)	**66.0** (41.6 to 90.8)	↑	UK CRI	UKCP18	12 km
Met Office heatwave events each year (count)	**0.8**	RCP4.5	**1.6** (1.0 to 2.6)	**2.3** (1.2 to 4.0)	**3.9** (1.8 to 5.4)	↑	UK CRI	UKCP18	12 km
Frost days each year <0°C (count)	**35.6**	RCP4.5	**26.9** (20.4 to 33.6)	**22.5** (14.9 to 31.1)	**17.1** (8.8 to 27.4)	↓	UK CRI	UKCP18	12 km
Rainfall									
Mean annual rainfall (mm)	**619**	RCP4.5	626 (590 to 665)	616 (578 to 658)	611 (562 to 661)	↕	UK CRI	UKCP18	12 km
Mean summer rainfall (mm)	**142**	RCP4.5	134 (112 to 155)	124 (99 to 149)	99 (149 to 109)	↓	UK CRI	UKCP18	12 km
Mean winter rainfall (mm)	**178**	RCP4.5	187.6 (172 to 205.5)	191.6 (170.9 to 214.2)	171 (214 to 201)	↑	UK CRI	UKCP18	12 km
SPI Drought (proportion of time)	**7%**	RCP4.5	**8%** (6% to 11%)	**9%** (7% to 13%)	**11%** (8% to 19%)	↑	UK CRI	UKCP19	13 km
Wettest month on average (mm)	**October (69.1)**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UK CRI	UKCP18	12 km
Driest month on average (mm)	**February (41.5)**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UK CRI	UKCP18	12 km
Wet days (>20mm) (days/yr)	**2.3**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UK CRI	UKCP18	12 km
Very wet days (>30mm) (days/yr)	**0.6**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UKCP UI	UKCP18	12 km
Summer dry days (5 consecutive days < 1 mm) (days/yr)	**30.5**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UKCP UI	UKCP18	12 km
Highest daily precipitation rate (mm/day)	**49.2**	RCP4.5	*RCP8.5 Only*	*RCP8.5 Only*	*RCP8.5 Only*	N/A	UKCP UI	UKCP18	12 km
Other									
Met Office fire danger (days/year)	**31.8**	RCP4.5	**50.5** (36.8 to 65.9)	**59.8** (41.1 to 80.0)	**74.9** (49.3 to 100)	↑	UK CRI	UKCP18	12 km