UK CLIMATE PROJECTIONS

NEW AND EXCITING SCIENCE

UKCP Local (2.2km) describes how climate change will impact the types and extremes of weather for your local area.

Local (2.2km) is the newest addition to the UKCP suite of climate models, at a resolution on par with weather forecast models. Local (2.2km) provides better representation of hourly rainfall and extremes as well as the influence of mountains, coastlines and cities at a higher resolution.

WHAT'S NEW?

1. Local (2.2km) gives better understanding of flooding risk by providing a more realistic representation of hourly rainfall, including intensity and spatial detail. This is due to the ability of local (2.2km) to better represent small-scale atmospheric processes such as convection.

2. Local (2.2km) provides a better representation of flash flooding due to the first time it can simulate hourly rainfall extremes.

3. Local (2.2km) gives an improved representation of local rainfall patterns, which may impact the occurrence of high temperature events in local areas, in the coming decades.

4. Local (2.2km) better represents small-scale features due to the smaller model grid box than at a coarser (12km and 60km) resolution.

5. UKCP Local (2.2km) provides more spatially detailed projections including the influence of mountains, coastlines and cities at a higher resolution.

6. The representation of mountains and coastlines will be more accurate in Local (2.2km). Mountain peaks as well as islands, peninsulas and inlets that are about 2km in scale will be captured.

EASTER FLOODS 9-10 APRIL 1998

- Event observation
  - Observed 12hr accumulation total: 61.6mm near Worcester
  - Observed peak rainfall rate: 10mm/hr in the south

SUMMER STORMS 9 AUGUST 2001

- Event observation
  - Northolt: 09-08-01 12hr accumulation total: 57mm
  - Northolt: peak hourly rainfall rate: 34mm/hr in the north

HOTTEST MODELLLED SUMMER DAY

- Why the difference?
  - Cloud differences between Regional (12km) and Local (2.2km) and/or drier soils in Local (2.2km) could be a contributing factor.

- Example of hottest hourly temperature that occurs in the baseline period (1981-2000) in any ensemble member.

- Why the difference?
  - Local (2.2km) gives an improved representation of local soil moisture, which may impact the severity of high temperature events in local areas, in the coming decades.

- Local (2.2km) better represents small-scale features due to the smaller model grid box than at a coarser (12km and 60km) resolution.

- The representation of mountains and coastlines will be more accurate in Local (2.2km). Mountain peaks as well as islands, peninsulas and inlets that are about 2km in scale will be captured.