

Supplementary Information

Data: <https://github.com/ed-hawkins/data-for-papers>

(will obtain a DOI on paper acceptance)

The carbon dioxide emissions data is from the Global Carbon Project (Friedlingstein et al. 2023) and is the cumulative sum of the fossil fuel and land-use related anthropogenic emissions since 1750.

The global temperature timeseries is from HadCRUT5 (Morice et al. 2021) for 1850-2022, and the smoothed version uses a 41-year loess filter.

HadUK-Grid (Hollis et al. 2019) provides the UK mean temperature series (1884-2022), and the vapour pressure and sea level pressure series used to derive specific humidity (1961-2022). The rainfall intensity index (1891-2022) is the spatial average of the average rainfall on wet days (>1mm; often termed SDII), with the underlying gridded daily rainfall data from HadUK-Grid.

The Ribble flow data (1973-2022) is measured at Samlesbury (NRFA, 2023) and is shown for ‘water years’ (defined as October to September, plotted for the year that the October is in).