

Digital Archive of Extreme UK Rainfall Events

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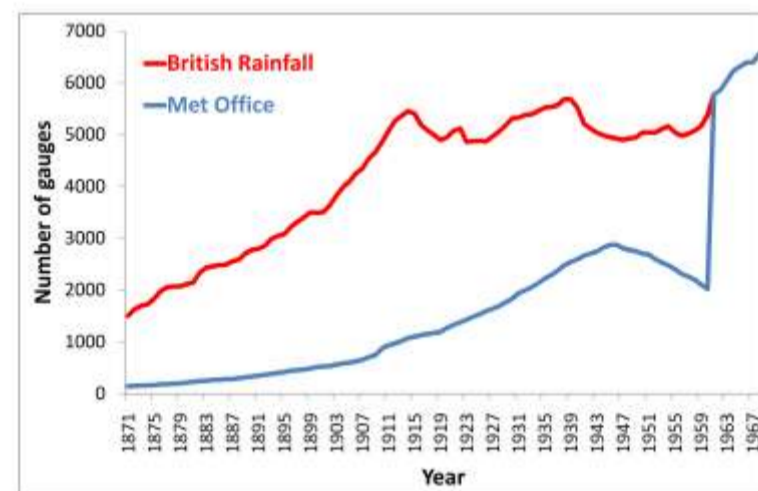
Data Content

A new digital archive of extreme rainfall events has been compiled from the publication *British Rainfall*. The period covered is 1866 to 1968.

The data includes:

- Over 28,000 rainfall observations (24 hours, from 9am to 9am, exceeding a threshold)
- Over 100 descriptive text chronicles
- Over 250 rainfall maps and photographs

Data coverage



Data is taken from over 1500 gauges from 1871, rising to 4500 by 1908, and over 6000 by 1960.

Gauges were grouped by division which included the Irish Republic up to 1939.



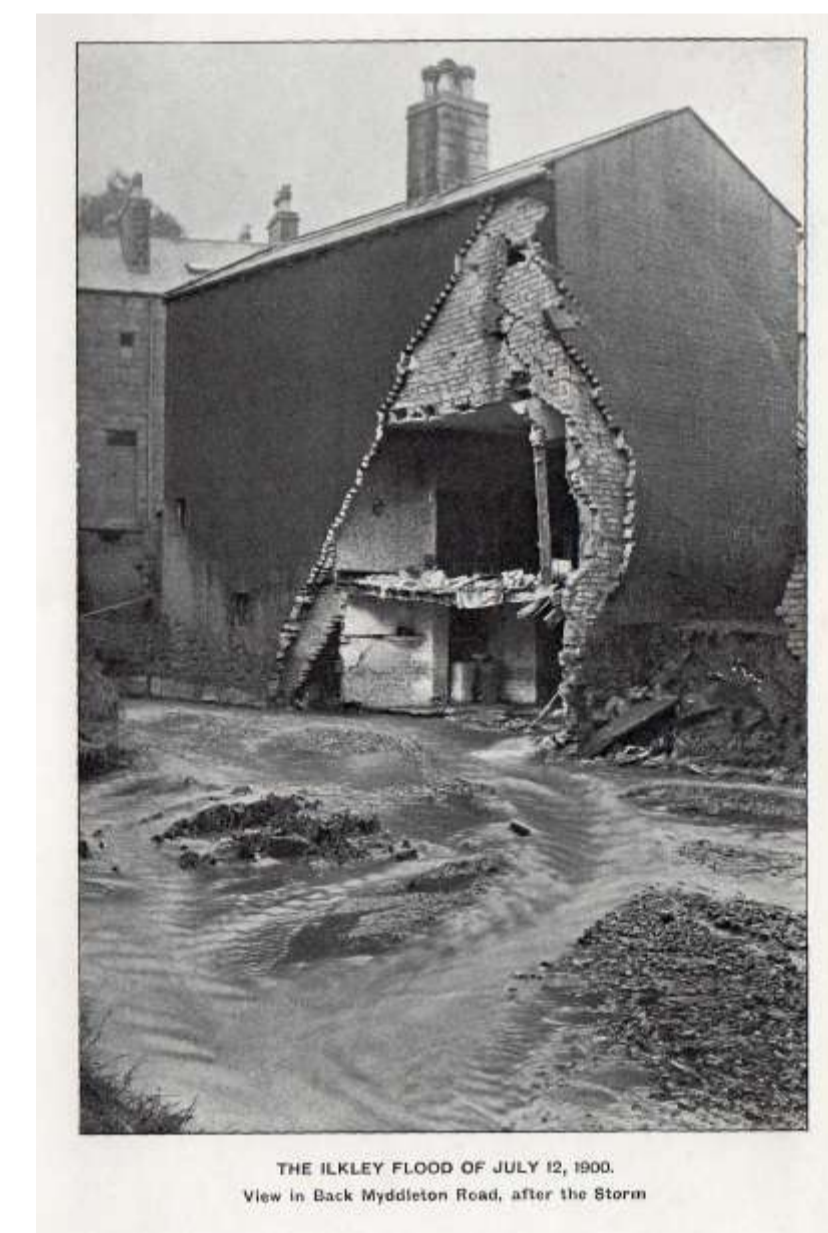
Examples of Events

Archive data for the Louth flood, May 1920 (right).

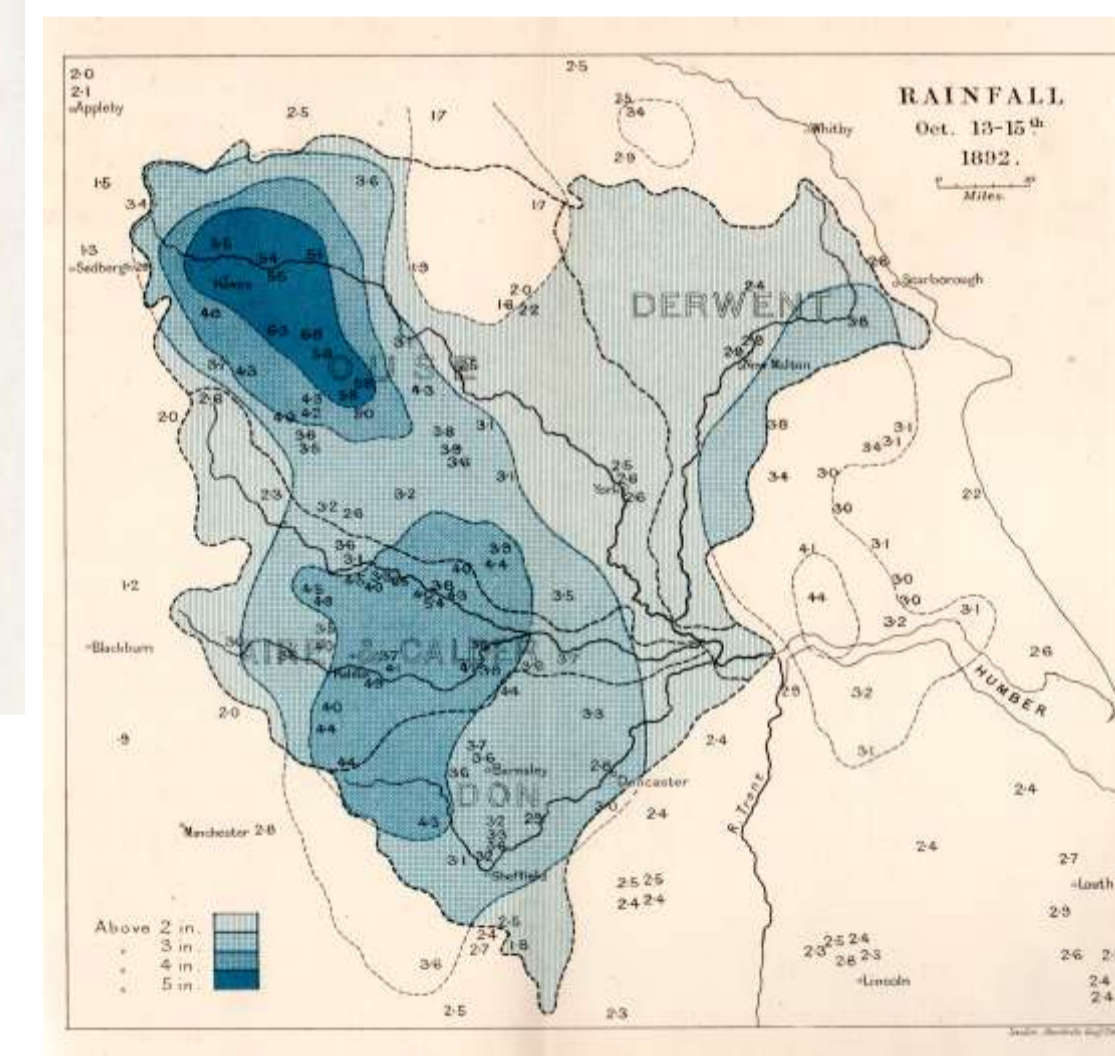
Archive text for June 1931, describing flooding in N.Devon (below).

Date	Gauge Name	Rainfall (inches)	Rainfall (mm)	Percentage of annual total
29/05/1920	Woodhall Spa (Galm Ho.)	2.83	71.9	11.4
29/05/1920	Homcastle	3.95	100.3	13.6
29/05/1920	Lincoln (Sessions House)	2.06	52.3	8.3
29/05/1920	Louth (Hallington)	4.00	101.6	
29/05/1920	S. Elkington (Elkington H.)	4.69	119.1	15.6
29/05/1920	Wold Newton	2.50	63.5	9.1
29/05/1920	Grainsby Hall	3.40	86.4	11.9
29/05/1920	Grimsby (Abbey Road)	2.00	50.8	8.1
29/05/1920	Brindle (Whiteholme)	2.86	72.6	7.0
29/05/1920	Preston (Corporation Off.)	2.82	71.6	7.2
29/05/1920	Leyland (Worden Hall)	3.23	82	8.1
29/05/1920	Bamber Bridge (Cuerden H.)	2.50	63.5	6.4
29/05/1920	Barnsley (Jordan Hill)	2.60	66	8.5

"Most of the rain-fall measured at 9h. on the 5th, viz., 2.31 inches, fell between 6h. 30m. and 8h. [] We experienced a flood which broke down fences and stone walls, uprooted trees, tore away the river banks and covered the meadows with stones and debris..."



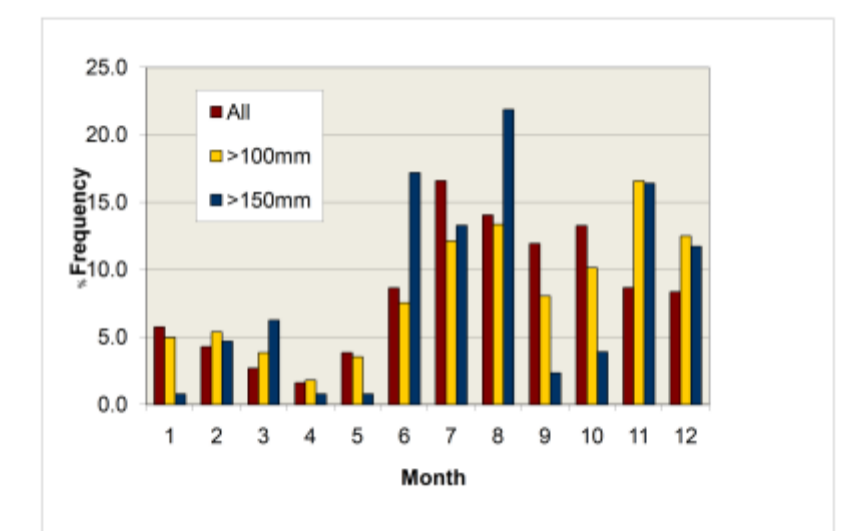
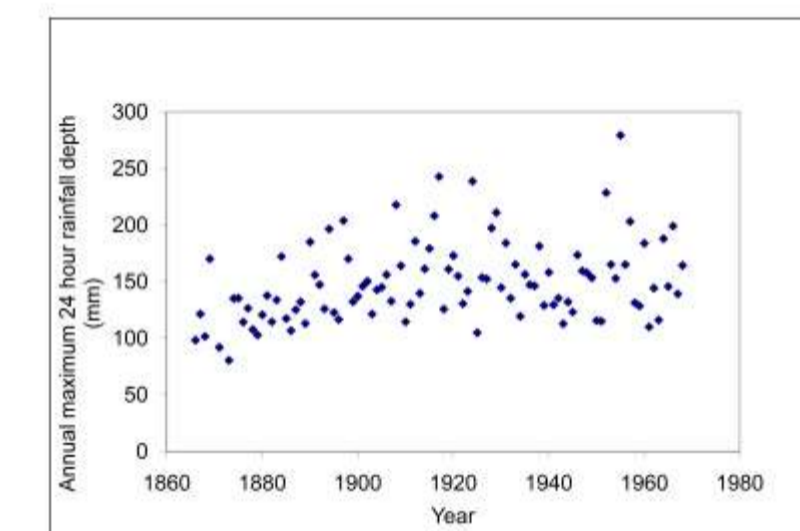
Photograph of flood damage, Ilkley, 1900.



Isohyetal map for 13-15th October 1892. Use of such historical data can raise awareness of flood risk.

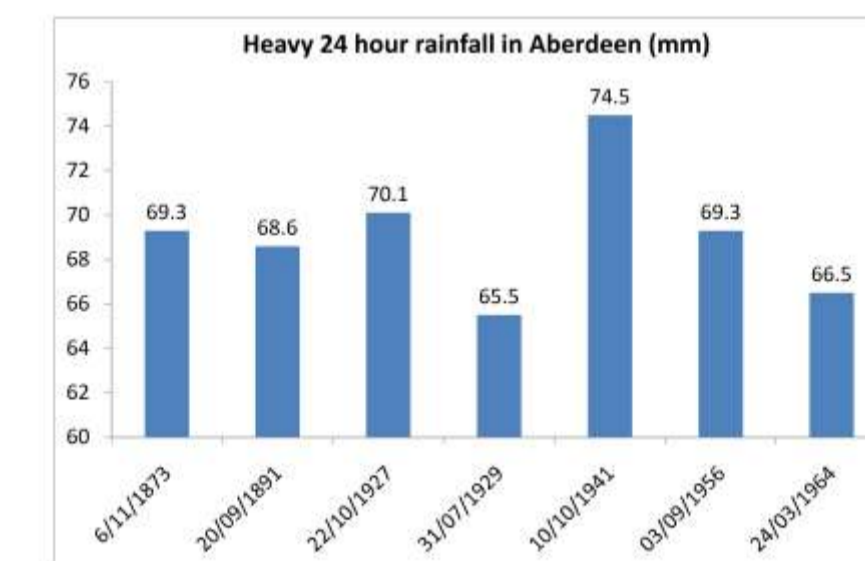
Applications

Temporal and spatial analysis



Analysis included identifying annual maxima (left), classification of rainfall patterns and the seasonal distribution of extreme rainfalls (right).

Assessing current rainfall in a historical context



The archive allows comparison with recent events e.g. flooding after 67 mm at Aberdeen on 04/09/2009.

A geo-referenced version of the archive, with a GIS interface is currently being used by the Thames Region of the Environment Agency.

The archive is now available for further research and consultancy.