

The wet autumn of 2000

The autumn of 2000 - September to November - was the wettest on record over England, Wales and Northern Ireland, as well as over the UK as a whole (in a series from 1914). Over Scotland it is the ninth wettest autumn in a series from 1914. There is an England and Wales rainfall series from 1766 and the value for autumn 2000 is the highest in this series.

The wet weather brought widespread flooding to England and Wales as rivers rose to record levels and burst their banks. The worst flooding was in mid-October and then from late October into early November. The disruption was compounded by some very strong winds at the end of October, damaging buildings, trees and power lines and cutting road and rail links.

Impacts

The flooding that occurred across much of England and Wales in the autumn and early winter of 2000 was the most extensive since the snowmelt-generated floods of March 1947. In all, 10,000 homes and businesses were flooded at 700 locations. Peak flows on five major rivers - the Thames, Trent, Severn, Wharfe and Dee - were the highest for sixty years, and the River Ouse in Yorkshire reached its highest level since the 1600s. Many river catchments were subjected to multiple flood events, especially in south-east England.

Two areas were particularly hard hit. In mid-October, large areas of Kent and Sussex were left underwater as rivers such as the Ouse at Lewes (East Sussex), the Uck at Uckfield (East Sussex) and the Medway at Tonbridge (Kent) burst their banks. Hundreds of homes and businesses were flooded to a depth of several feet, floodwater and landslips closed roads and rail travellers faced widespread delays and cancellations.

By early November, it was the turn of Yorkshire, with flood warnings on the Ouse and its tributaries such as the Derwent and Aire. On the 4th, the River Ouse at York was 5.3 m above its normal summer level and the associated flooding there was reported as the worst in 400 years of records; some 5000 properties were affected. Around this time there were similar scenes along the Severn, where water levels at Shrewsbury and Worcester were the highest since 1947.

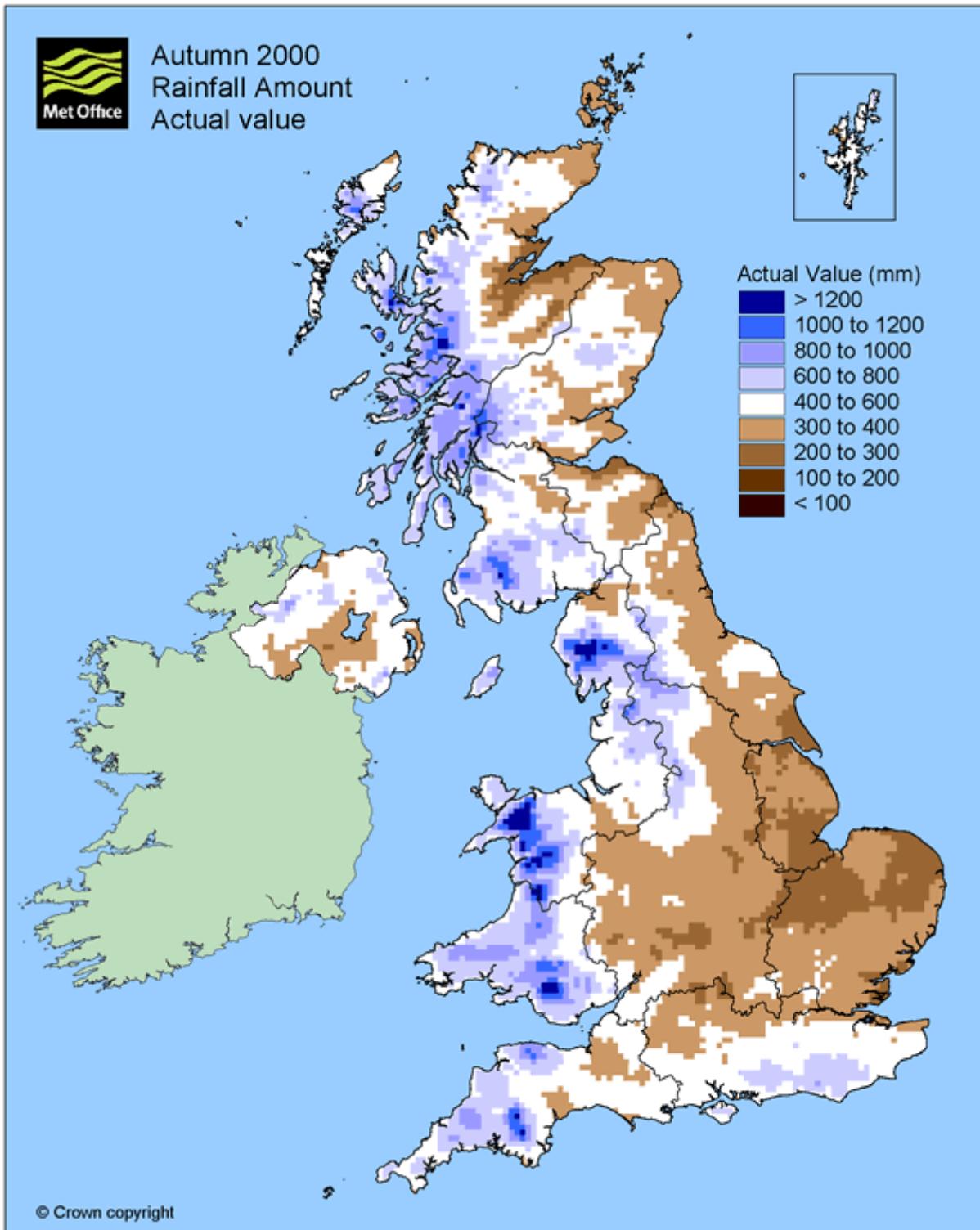
Between these flooding episodes, severe gales battered southern Britain on 30 October causing extensive building damage, uprooting thousands of trees, cutting power, and disrupting road, rail and ferry services. Heavy rain brought further flooding in south Wales and from Cornwall to Kent.

Weather data

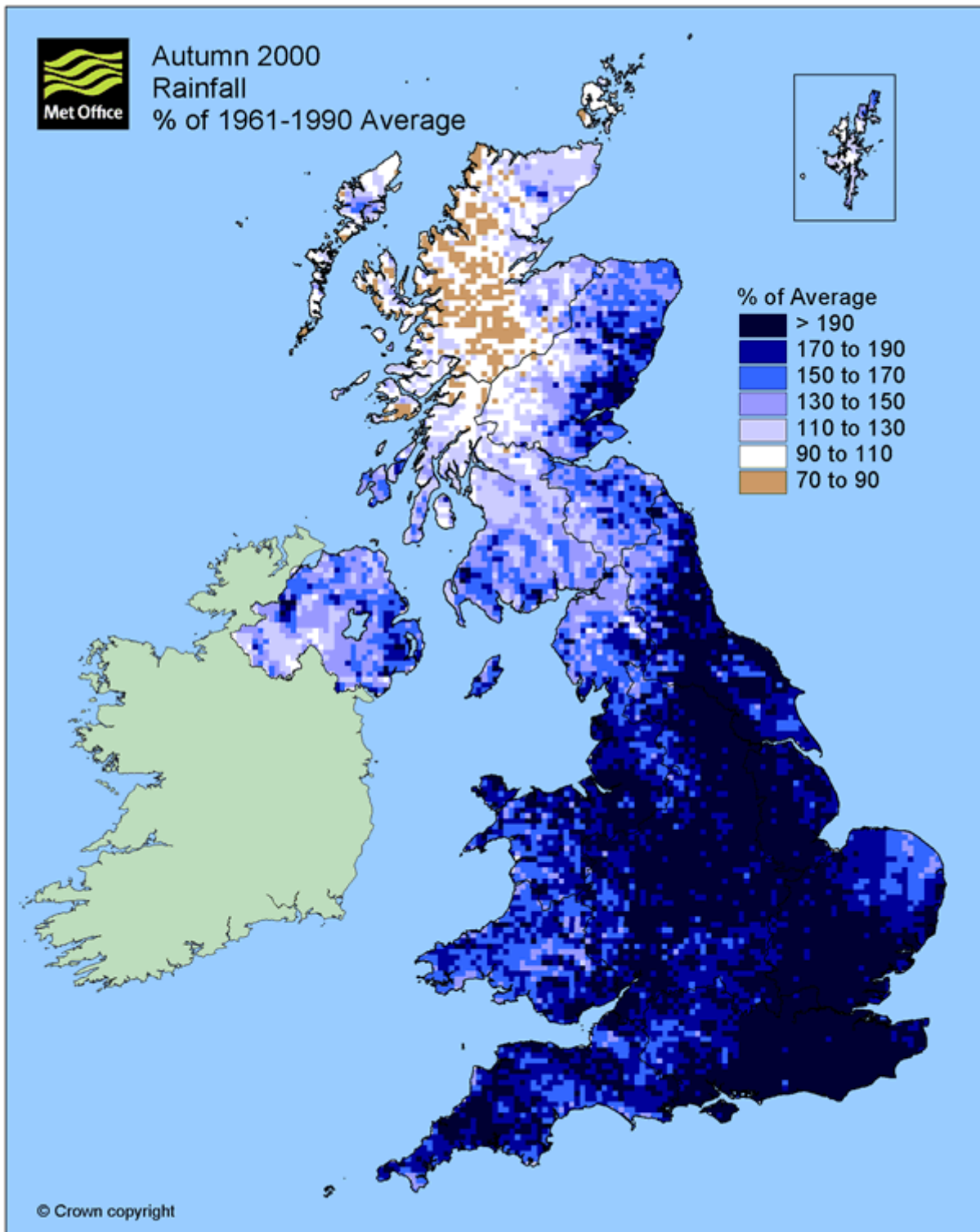
England and Wales Precipitation

These maps show the distribution of rainfall in Autumn 2000, both the **Actual values (mm)** and the **Anomaly values (percentages of the 1961-90 long-term average)**.

Actual Values



Anomaly values



The second half of *September* was unsettled with a very wet spell from the 14th to 21st. There were heavy prolonged downpours on several days, including a fall of 84 mm at Walderton (West Sussex) on the 15th.

Low pressure dominated the UK's weather during October, with several days of heavy rain and strong winds. Flooding occurred in many parts of the UK but Sussex and Kent were hardest hit on 10th and 11th when 156.4 mm fell at Plumpton (East Sussex) in 48 hours. This rainfall and other high 48hr totals recorded in Sussex are shown below.

Station	Rainfall 0900 10 Oct - 0900 12 Oct (mm)
Plumpton	156.4
Barcombe Cross	140.8
Uckfield	126.8
Ringmer, Bishops Lane	123.4
Falmer	107.7
Hove, Shirley Road	106.2
Brighton, Lewes Road	102.9

The end of the month was very wet and stormy over England and Wales with gale damage to buildings and trees, and transport disrupted.

The areal rainfall over England and Wales was 188 mm, making it the wettest October since 1903 (in the historic series from 1766).

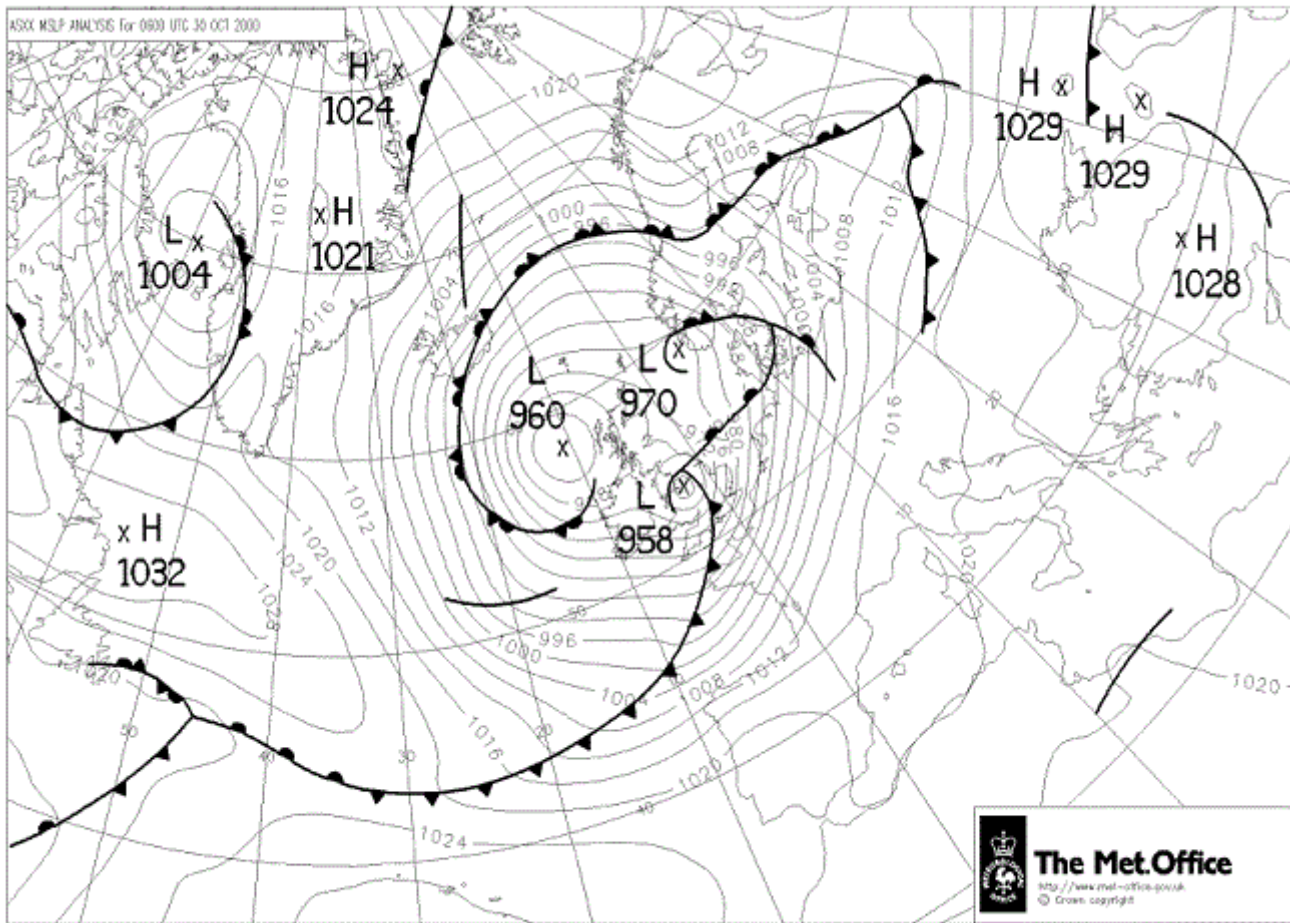
Many weather stations across England and Wales broke their October rainfall records including:

Station	Oct 2000 total (mm)	Previous October record (mm)	Records began
Linton-on-Ouse (North Yorkshire)	134.6	129.8 (1960)	1958
Bracknell (Berkshire)	177.8	170.9 (1987)	1962
Valley (Anglesey, North Wales)	209.2	192.5 (1987)	1941
Herstmonceux (East Sussex)	291.0	224.0 (1987)	1976

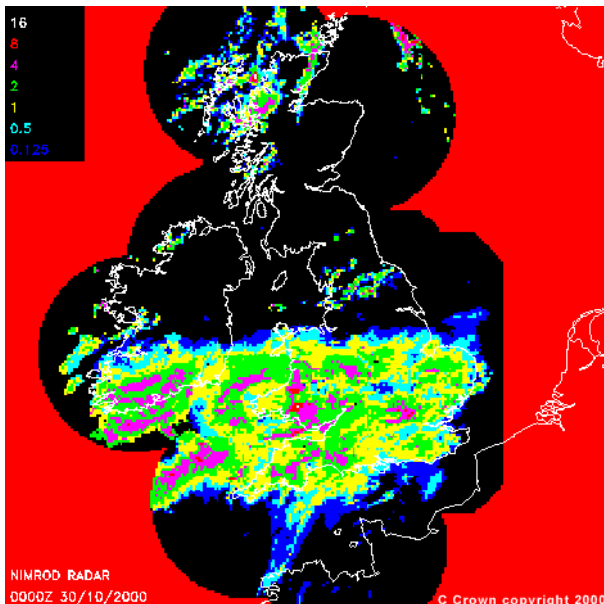
The 30 October storm

This brought heavy rainfall and strong winds to many areas of southern Britain. Rainfall over southern England and the Midlands was very heavy with many places seeing over 50 mm on 29th / 30th. Snow fell in parts of northern England; Boltshope Park near Durham reported 15 cm of snow in less than 3 hours. Winds overnight were strongest in the south-west and south Wales. A gust of 84 knots (97 m.p.h.) was measured at Mumbles Head, south Wales with 80 knots (92 m.p.h.) at Plymouth and 81 knots (93 m.p.h.) on the Isle of Portland (Dorset).

This synoptic chart shows the analysis at 0600 (UTC) on 30 October.



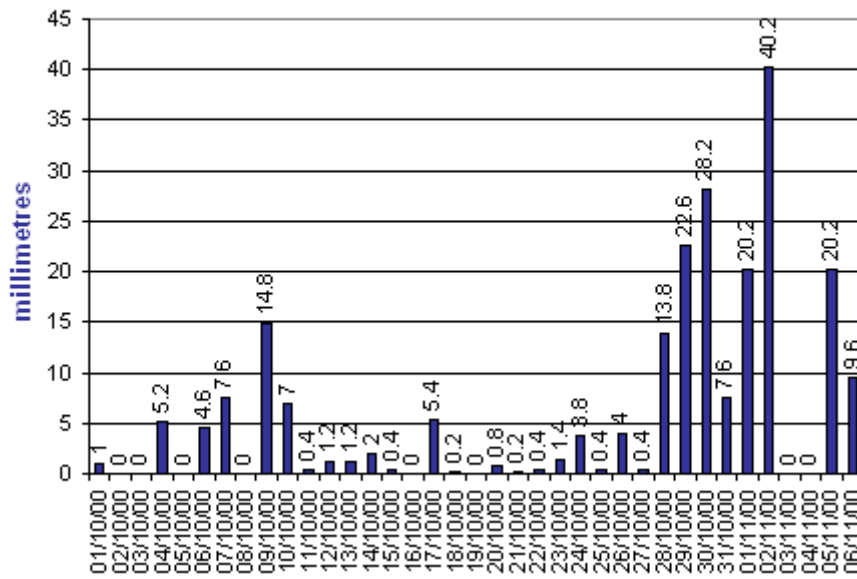
This radar image shows the development of the storm on 30 October. The colours are rainfall rates in mm/hr.



The unsettled weather continued into *November*, making it a very wet month with 2 -3 times the normal rainfall over a wide area. Among the wettest days were the 2nd when 40-50 mm fell over Yorkshire, and the 5th with 60-80 mm locally in Sussex and north-east Wales. With 175 mm over England and Wales it was the wettest November since 1951, but November 2009 was wetter (197 mm).

The following diagram shows the daily rainfall at Linton-on-Ouse leading up to the flooding along the Yorkshire Ouse.

Daily rainfall totals at Linton-on-Ouse



Additional information

'The millennium floods, autumn 2000', I Currie, Weather Eye No 7 2002 (a Flood Special issue)

'The autumn 2000 floods in England and flood management.' I.Kelman, Weather (R.Met.Soc.), VOL. 56 NO. 10, 2001 (a special issue devoted to Water Resources and floods)

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