



METEOROLOGICAL OFFICE

ESTIMATED SOIL MOISTURE DEFICIT AND POTENTIAL
EVAPOTRANSPIRATION OVER GREAT BRITAIN

SOIL MOISTURE DEFICIT AT 0900 GMT ON 29 OCTOBER 1980

The period since the previous bulletin (15 October) has been one of almost continually unsettled weather, although the first few days of the fortnight were mainly dry in the Hebrides, parts of southwest Scotland and northwest England. Attention was drawn in the previous bulletin to heavy rainfall on the day of preparation, 15th: more than 25 mm was recorded quite widely over southern England and South Wales, with more than 50 mm in the Isle of Wight and Exmoor. Heavy rainfall was also experienced on 15th in east Midlands and Lincolnshire: the rainfall continued on 16th in these areas and spread into East Anglia. On the North York Moors, 90 mm was recorded on 16th-17th. A period of very heavy rainfall was experienced on 21st-23rd in Hebrides, western Grampians, southwest Scotland and northwest England (the worst flooding for many years was experienced in Northern Ireland on 22nd). The heavy rainfall continued in northwest England in succeeding days, culminating in extremely heavy rainfall on 26th-27th in Lancashire and also in North Wales: on these two days, values exceeded 100 mm in the Ribble and Wyre valleys and 200 mm in Snowdonia. Over the five days, 23rd-27th, more than 240 mm was recorded in Bowland Forest and more than 150 mm to the east of Preston: such values, in five days, have an estimated return period of 300 to 500 years in these localities. Widespread flooding followed the rainfall in much of Lancashire and North Wales. Heavy rain, more than 50 mm, fell in the North West Highlands on 28th and amounts exceeded 12 mm on and near the south coast of England on the same day.

Less than average rainfall for the fortnight occurred on the Somerset plain, in parts of the Outer Hebrides and in Shetland where barely more than half the average was recorded. Over most of Britain, however, rainfall for the fortnight was substantially greater than average. Twice the average was exceeded in the eastern half of Scotland and in Ayrshire, over the whole of northern England, Snowdonia, the east Midlands, East Anglia and southeast England (except Kent). More than three times the average was recorded in west Lancashire and over much of Lincolnshire.

General rainfall for the period June to 28 October 1980 over Scotland was the greatest for such a period of months since the series for Scotland began in 1869.

Soil moisture deficits decreased substantially over River Areas in the fortnight (in those areas where deficits were high on 15 October). General deficits for areal land use were still above average on 28th in Trent, Welland and Nene, Great Ouse, Norfolk and Suffolk, Lee, Essex, Thames and the Wessex group. In Scotland, general deficits are still above average for Forth and Tweed River Purification Board areas.

RATES OF SUBSCRIPTION: £22.73 per season (post free)

Apply to: Director-General
Meteorological Office, Met O 8c
London Road
Bracknell
Berkshire
RG12 2SZ

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ESTIMATED SOIL MOISTURE DEFICIT (S.M.D.)
AT 09 GMT ON 29 OCTOBER 1980

River Area	Areal Land Use	Change during the week ending 09 GMT on	
	Estimated S.M.D. mm	29 October 1980 mm	22 October 1980 mm
Northumbrian	29.7	- 19.6	- 9.0
Yorkshire	19.5	- 22.3	- 18.7
Trent	35.7	- 14.4	- 24.0
Lincolnshire	62.6	- 16.5	- 35.1
Welland and Nene	62.8	- 2.6	- 29.1
Great Ouse	73.4	- 0.6	- 26.9
Norfolk and Suffolk	72.3	- 5.2	- 30.4
Essex	86.1	- 4.4	- 29.7
Lee Division	76.5	- 3.7	- 35.2
Thames Conservancy	52.7	- 5.8	- 25.2
London Area	51.1	- 7.4	- 26.7
Kent	37.3	- 6.4	- 13.7
Sussex	15.0	- 9.6	- 12.1
Hampshire	35.0	- 7.8	- 17.3
Isle of Wight	53.2	- 16.3	- 34.8
Upper Thames	59.2	- 6.7	- 22.9
Avon and Dorset	39.6	- 9.0	- 17.6
Devon	11.4	- 7.1	- 7.3
Cornwall	4.7	- 2.1	- 10.2
Somerset	30.0	- 9.1	- 12.3
Bristol Avon	49.4	- 3.9	- 23.1
Severn	32.6	- 8.9	- 18.6
Wye	16.2	- 9.6	- 6.5
Usk	8.1	- 3.7	+ 1.0
Glamorgan	0.0	0.0	0.0
Southwest Wales	0.1	- 0.9	- 1.7
Gwynedd	2.8	- 14.8	- 6.0
Dee and Clwyd	15.8	- 25.1	- 3.5
Mersey and Weaver	11.6	- 17.5	- 3.1
Lancashire	0.0	- 12.7	- 4.1
Cumbria	0.0	0.0	- 2.1

N.B. Apart from normal changes these differences also reflect retrospective adjustments after receipt of additional data.



