



METEOROLOGICAL OFFICE

ESTIMATED SOIL MOISTURE DEFICIT AND POTENTIAL
EVAPOTRANSPIRATION OVER GREAT BRITAIN

SOIL MOISTURE DEFICIT AT 0900 GMT ON 15 OCTOBER 1980

The first few days of the most recent fortnight (from 1 October) were fairly dry over much of England and Wales but heavy rain fell in Dyfed, Snowdonia, northwest England and much of western Scotland on 3rd. The following week continued very wet in northwest Scotland with amounts exceeding 25 mm on several days in the mountains. The 6th was a day of heavy rainfall over most parts of the country although extreme eastern Britain escaped comparatively lightly: more than 20 mm was recorded quite widely over western areas from North West Highlands through the Southern Uplands, Lake District, Pennines, much of Wales to southwest England and even as far east as Sussex and the Weald. The 7th was also a day of heavy rainfall in western Scotland, the Pennines and southwest England: over the southern Pennines, 100 mm was recorded in the three days, 6th-8th. Heavy rainfall continued on each day up to 10th in southwest England but in much of northern England and eastern Scotland, the period from 8th was quite dry. The 10th was a very wet day over southern Britain from midland England and Wales southwards, as a small depression moved up the English Channel into the Continent: more than 20 mm was recorded on the Welsh mountains, Exmoor and much of southern-central England. Values exceeded 50 mm on 10th on parts of the south coast, including Worthing where 95 mm was recorded on 20 September. More heavy rain fell in parts of southern-central and southwest England on 13th-14th as a frontal system moved slowly east and then retreated westwards. The period from 6th to 11th was rather thundery and some of the thunderstorms were quite violent. The heavy rain overnight on 15th-16th, up to 25 mm, will have reduced deficits quite substantially below the values shown on the maps.

Less than half the average rainfall for the fortnight was recorded in extreme eastern Britain from Tynemouth to Aberdeen. Less than average occurred in parts of eastern Scotland, northeast England, eastern Cumbria, over much of the South Midlands and around the Thames estuary. Twice the average was exceeded in extreme northwest Scotland, the Cairngorms, south Dyfed, north Devon and Dorset.

Many areas in North Wales, Pennines, northwest England and western Scotland will have developed small deficits in recent dry days but amounts will be quite insignificant and soils are shown at capacity there. Steep gradients of soil moisture deficit in southeast Scotland and on the eastern flanks of the Pennines are notable.

General soil moisture deficits for areal land use were still above average for most river areas, exceptions being Kent, Sussex, Hampshire, Devon, Cornwall, Usk, South West Wales and Cumbria. General deficits were well above average in Tay, Forth and Tweed River Purification Boards but amounts were negligible in western and northern Boards.

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 (SMD)
AT 09 GMT ON 15 OCT 1980

River Area	Areal Land Use Estimated SMD mm	Change during the week ending 09 GMT on	
		15 Oct 80 mm	8 Oct 80 mm
Northumbrian	58.3	+14.3	- 2.8
Yorkshire	60.5	+ 3.2	- 8.4
Trent	74.1	- 1.1	-11.6
Lincolnshire	114.2	+ 2.5	- 9.4
Welland and Nene	94.5	- 3.5	- 9.3
Great Ouse	100.9	- 0.8	-10.2
Norfolk and Suffolk	107.9	- 0.7	- 8.6
Essex	120.2	- 1.6	- 3.8
Lee Division	115.4	- 7.8	- 4.7
Thames Conservancy	83.7	- 9.3	- 8.9
London Area	85.2	-14.7	-10.9
Kent	57.4	-13.6	- 5.8
Sussex	28.7	-24.3	- 9.2
Hampshire	60.1	-12.5	- 9.1
Isle of Wight	104.3	-11.0	- 6.8
Upper Thames	88.8	- 1.8	- 7.1
Avon and Dorset	66.2	-15.1	-10.1
Devon	25.8	-15.7	- 9.4
Cornwall	17.0	-11.7	- 9.7
Somerset	51.4	-17.7	-11.5
Bristol Avon	76.4	- 9.7	-10.8
Severn	60.1	+ 4.2	-14.2
Wye	32.3	- 2.0	-19.8
Usk	10.8	- 7.2	-13.1
Glamorgan	0.0	- 2.3	- 4.9
South West Wales	2.7	- 2.1	- 9.5
Gwynedd	23.6	- 3.2	-12.9
Dee and Clwyd	44.4	+11.0	- 9.5
Mersey and Weaver	32.2	+ 8.0	-15.4
Lancashire	16.8	+ 0.8	-12.2
Cumbria	2.1	+ 2.1	- 0.1

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

ESTIMATED SOIL MOISTURE DEFICIT AREAL LAND USE

0900 GMT 15 October 1980

Areas with no soil moisture deficit are shaded. Remaining areas bounded by 0, 12, 25, 50, 75, 100 & 125mm lines



