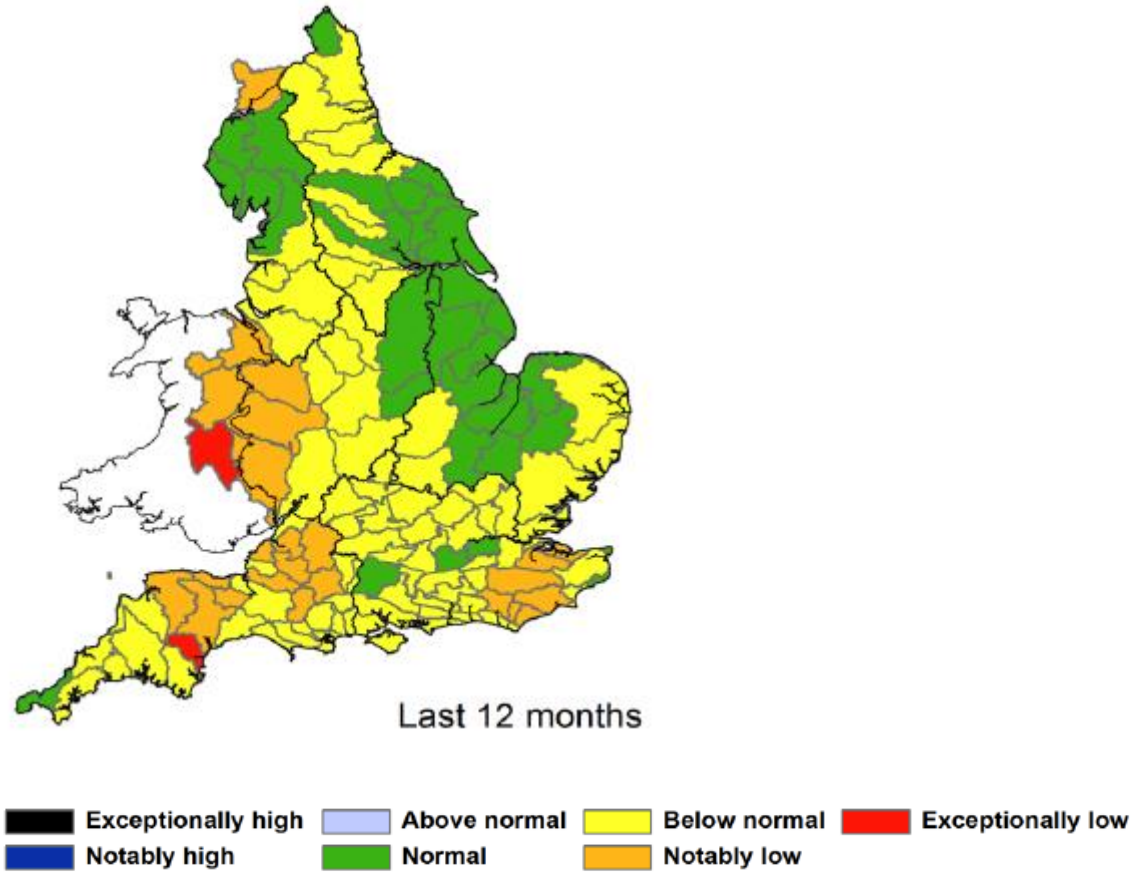
Water Resources summary and outlook August 2017

Summer (June-August) rainfall was above average for the majority of the UK with the exception of the Midlands. Despite the wet summer, 12-month rainfall accumulations remain around 90% of the long-term average at the national scale. Autumn and winter rainfall will determine the onset and magnitude of recharge and have a greater than usual influence the water resource outlook for 2018.

Rainfall 12 month Rainfall Map



Review

August rainfall totals were 'normal' or higher for the time of year across hydrological areas. Cumulative rainfall totals for the past 3 months range from 'normal' to 'notably high' for the time of year across England. Despite the wet weather, August was the driest of the last three months, ending a summer which ranks amongst the top 10 wettest on record for the UK since 1910).

In contrast, cumulative rainfall totals for the past 12 months show a rainfall deficit with most of England being below 'normal' or 'notably low' for the time of year.

Outlook

The second half of September is likely to see more settled spells – especially in the south, south-east and west of the country. For the 3-month period September to November above-average rainfall is considered slightly more probable than below-average rainfall but there is no strong signal either way.

Rainfall: totals normal or higher for the time of year across the majority of hydrological areas resulting in 105% of the Long Term Average (LTA) in England. Regionally, August rainfall totals ranged from 99% of the LTA in north-east England to 126% in south-east England. More than 150% of average was registered in a band from south‑west to north‑east Scotland.

It was the fifth wettest summer on record for Scotland since 1910 while large areas of Northumberland, south Wales, Wessex and Norfolk recorded less than 90%.

Rainfall outlook: The one month and three month outlooks for groundwater suggest a continuation of above normal levels in some northern aquifers, and below normal levels in parts of the Chalk of south-east England. The winter recharge season will start from a below normal baseline in some areas.

River flows: Summer average flows above normal in northern and western UK, notably so in catchments draining western Scotland and parts of northern England and north Wales. Normal river flows occurred in the west of the UK and near or above average in southern and eastern Britain. Flows in some less responsive catchments of southern and central England were notably or exceptionally low for the time of year.

Compared with July, monthly mean river flows for August increased at just over two-thirds of indicator sites across England. But flows in the rivers Itchen and Eastern Rother were ‘below normal’ for the time of year and ‘exceptionally low’ in the River Coln which registered half its average summer flow and ranked second lowest on record behind only the 1976 drought, for the second consecutive month. The River Derwent ‘notably high’.

River flow Outlook projections. Two-thirds of the modelled sites have a greater than expected chance of cumulative river flows being below normal or lower by both the end of September 2017 and the end of March 2018.

Soil moisture deficits (SMDs): generally increased resulting in drier soils than average across east and central England, but wetter than average elsewhere, particularly across parts of Devon and Cornwall.Regionally, soils were drier at the end of August compared to the end of July across all English regions, with end of month SMDs ranging from 29mm in north-west England to 99mm in east England.

Groundwater: levels remained notably low at most sites, but less so than earlier in the summer. Much of south-east England remained below ‘normal’ or ‘notably low’ suggesting that recharge will commence from a below normal baseline.

End of month levels at major aquifer index sites ranged from: ‘exceptionally low’ for the time of year at Little Bucket (East Kent Stour chalk aquifer), Ashley Green (Chilterns East chalk aquifer) and Little Bucket (East Kent Stour chalk aquifer); below ‘normal’ or lower for the time of year at half of the indicator sites, to ‘normal’ for the time of year at Heathlanes (Shropshire sandstone aquifer), Dalton Holme (Hull and East Riding chalk aquifer) and Skirwith (Carlisle Basin and Eden Valley sandstone aquifer).

Levels at Wetwang (Hull and East Riding chalk aquifer), Crow Lady Farm (Fylde and Preston sandstone aquifer) and Woodyates (Upper Dorset Stour chalk aquifer) all increased slightly compared to the end of July.

Chalk: levels rebounded slightly relative to average

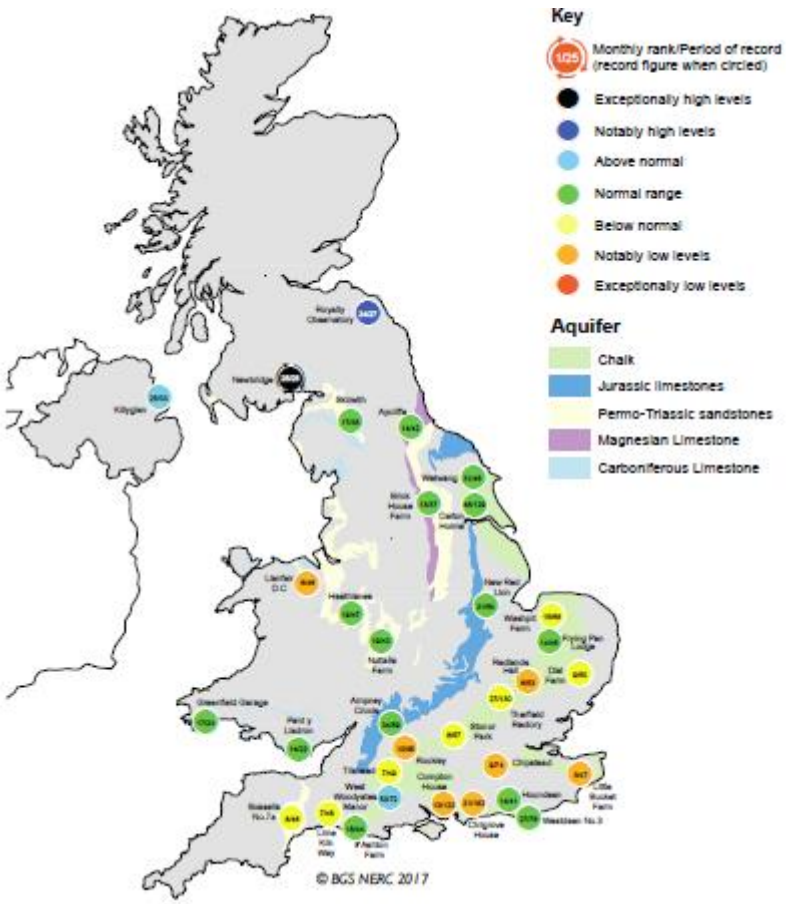
Jurassic and Magnesian limestones: (more rapidly responding aquifer) levels fell and remained within the normal range.

Permo-Triassic sandstones: fell, and remained notably low at Llanfair DC. However, a small rise at Newbridge produced a record high level for the third consecutive month.

Carboniferous Limestone: Levels rose in South Wales and overall in August were in the normal range.

Fell Sandstone: Overall fell but at the Royal Observatory notably high for the time of year.

Groundwater Map August 2017.



Ground water outlook projections: Half of the modelled sites have a greater than expected chance of below normal or lower groundwater levels for the time of year at the end of September 2017. By March 2018, just over a third of all modelled sites have a greater than expected chance of notably low or lower groundwater levels for the time of year.

Reservoir Stocks: Compared with the end of July, regional reservoir stocks increased in north-west and central England by 4% and 2% respectively and decreased elsewhere by up to 3%.

End of August stocks ranged from 67% of total capacity in south-west England to 87% in east England. Overall storage for England decreased slightly to 79% of total capacity.

Jenny Bashford 22.09.2017