

Monthly water situation report

Summary – July 2021

Solent and South Downs (SSD) had well above average rainfall in July receiving 196% (93mm) of the long term average (LTA) (47mm). Monthly mean river flows across SSD ranged from **above normal** to **exceptionally high**. Groundwater levels ranged from **normal** to **notably high**. Soil moisture deficits across SSD ended the month lower than the LTA. End of month reservoir stocks were above average at both Ardingly Reservoir (Ouse) and Arlington Reservoir (Cuckmere).

Rainfall

SSD had well above average rainfall in July receiving 196% (93mm) of the LTA (47 mm). The Isle of Wight was the wettest areal unit in SSD, receiving 239% (106mm) of the LTA (44mm). This represents the 6th wettest July total for this areal unit in a record going back to 1910. The Adur areal unit received the least rainfall but still recorded 165% (76mm) of the LTA (46mm).

The highest daily rainfall totals were observed at Knighton RG (Isle of Wight), where 69.9mm was recorded on the 25th of July. On the same day, Ryde Vineyard RG - also on the Isle of Wight - recorded the third highest daily total with 61.8mm. The total monthly rainfall for these two Isle of Wight gauges represent the highest ever July totals on records dating back to 1952 and 1949. Despite this record breaking rain, SSD as a whole only recorded the 28th wettest July on record.

The three month - May, June and July - total was the 3rd highest on record for the SSD area as a whole with all 14 areal units recording top ten figures.

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs ended the month lower than the LTA. This means that soils are wetter than average for the time of year.

River Flows

Monthly mean river flows across SSD ranged from **above normal** to **exceptionally high**. Monthly mean river flow recorded at Allbrook and Highbridge (Itchen) and Iping Mill (Western Rother) were **exceptionally high**, ranking as the 2nd and 3rd highest July values. The River Wallington at North Fareham, the Medina at Blackwater, the Adur at Sakeham, the Arun at Alfodean and the Ouse at Gold Bridge all recorded **notably high** mean flow in July. All remaining reporting sites were in the **above normal** range.

Groundwater Levels

End of month groundwater levels ranged from **normal** to **notably high**. Groundwater levels at Preston Candover and West Meon Hut GWL (East Hampshire Chalk) were **notably high** for July. The levels at Carisbrooke Castle (Isle of Wight) and Chilgrove House (West Sussex Chalk) were **above normal**. The remaining reporting sites recorded **normal** groundwater levels in July.

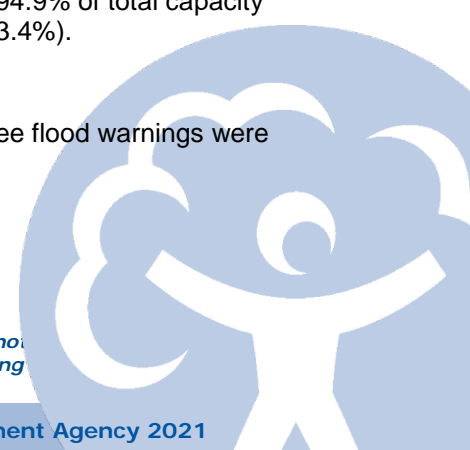
Reservoir Storage/Water Resource Zone Stocks

End of month reservoir stocks were above average at Ardingly Reservoir (Ouse) with 94.9% of total capacity (LTA 82%) and at Arlington Reservoir (Cuckmere) with 93.9% of total capacity (LTA 73.4%).

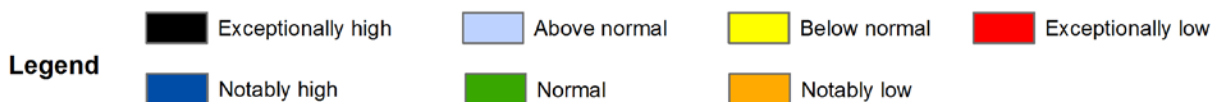
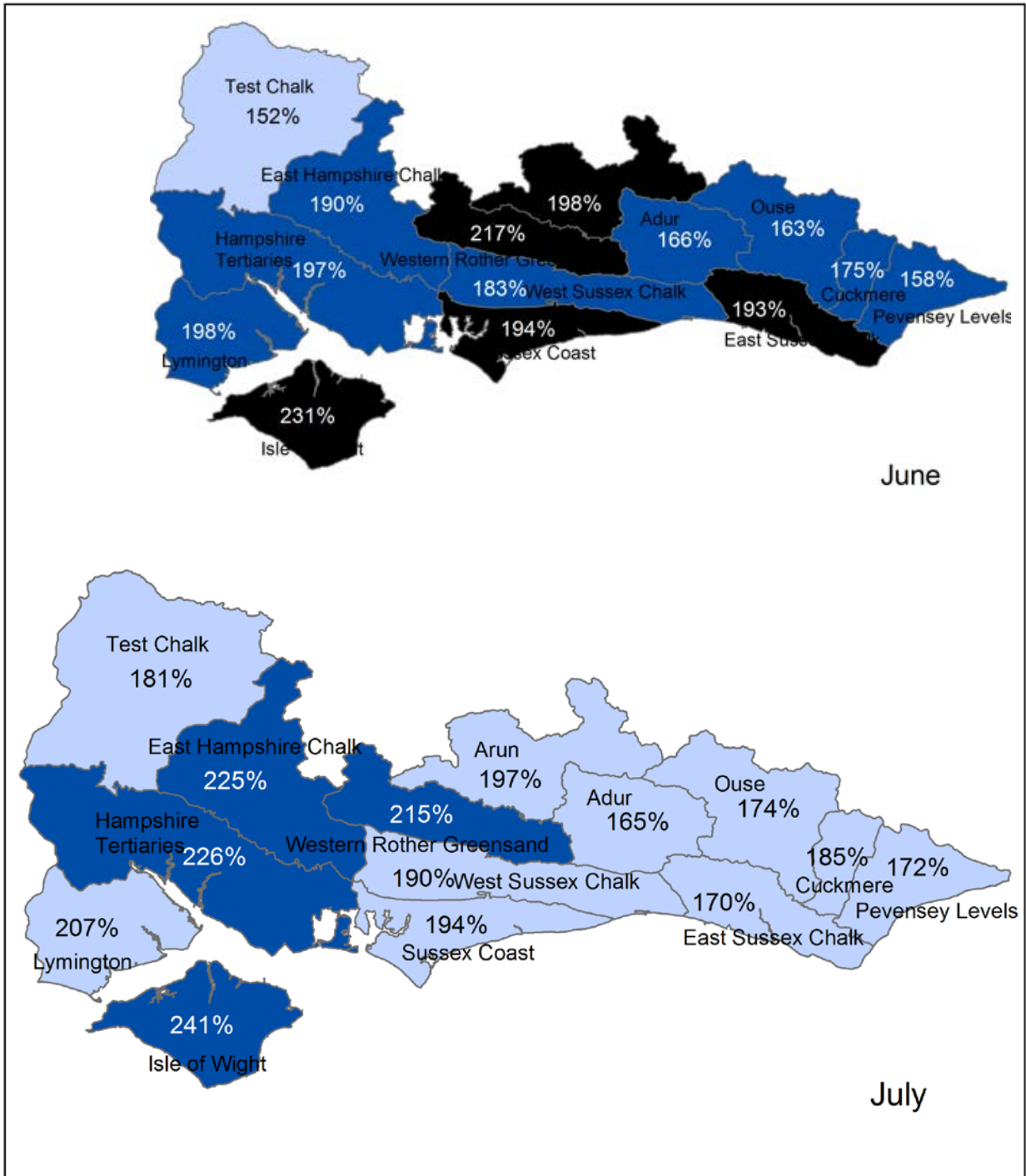
Environmental Impact

There were no abstraction licence restrictions in force in July. Five flood alerts and three flood warnings were issued in Hampshire and on the Isle of Wight July.

Author: [HydrologySSD](#)

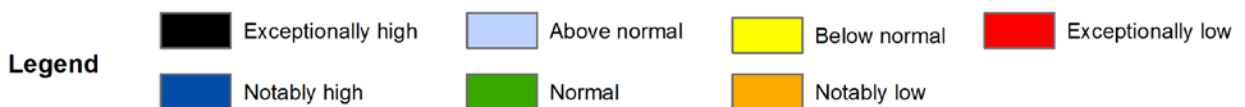
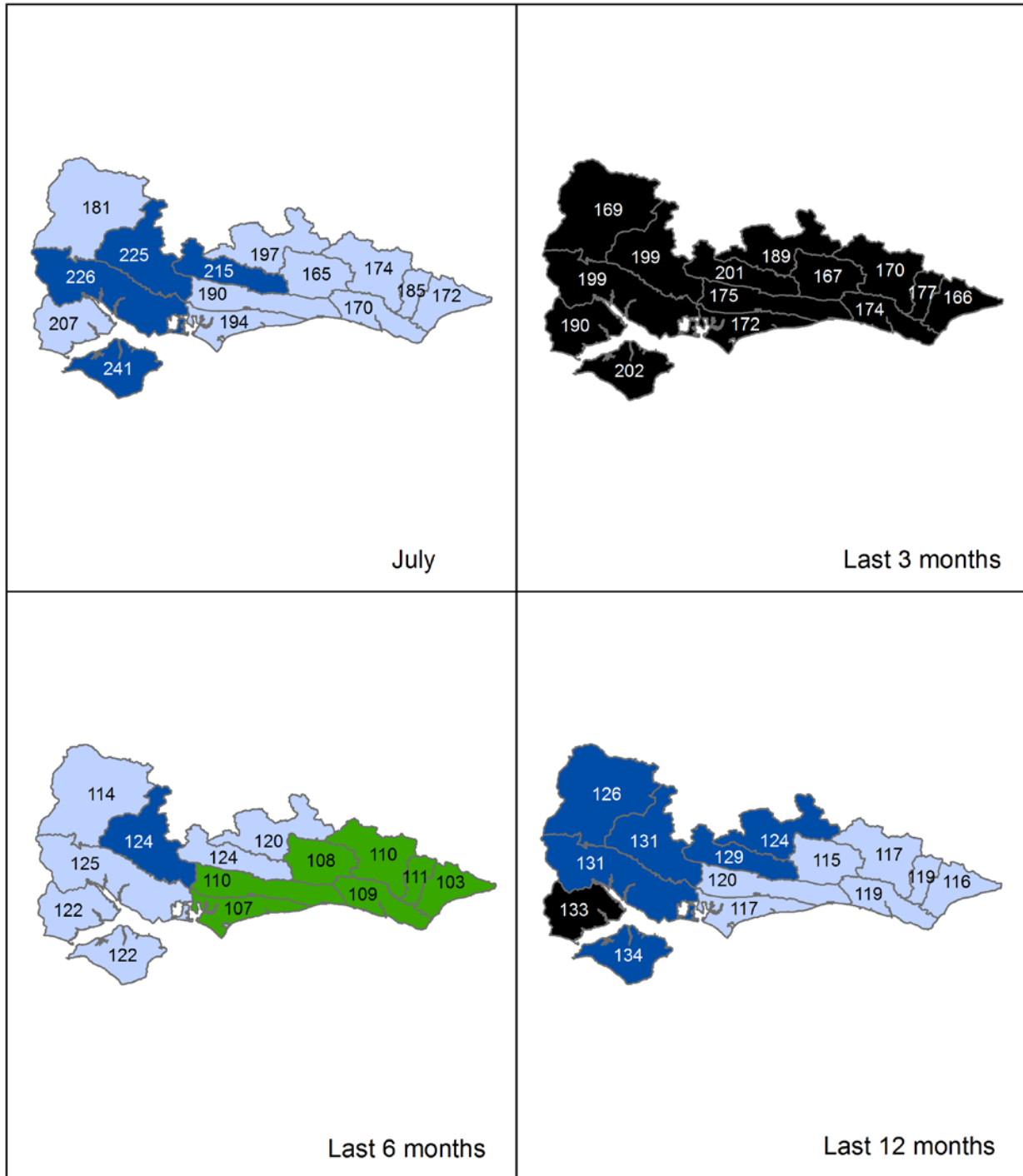


Rainfall Map 1



total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of Her Majesty's Stationery Office © Crown copyright. All rights reserved. Environment Agency, 100026380, 2021.

Rainfall Map 2

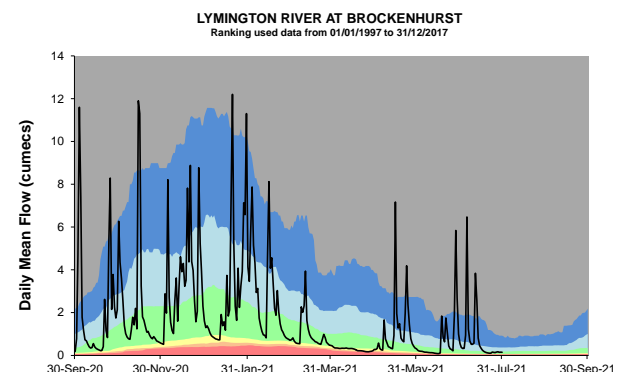
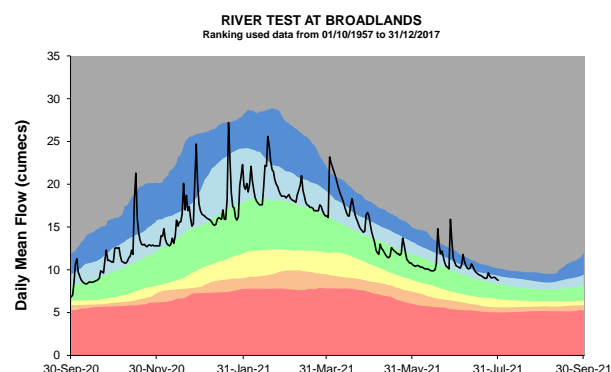
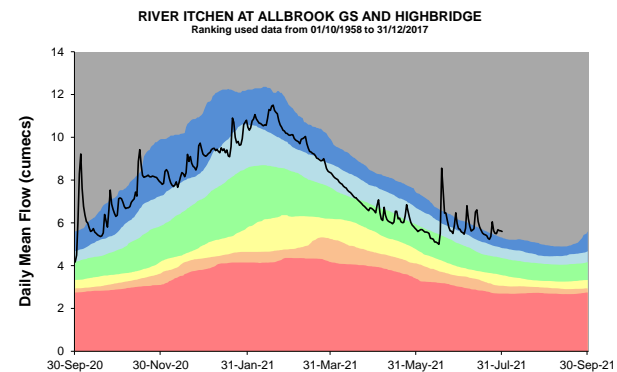
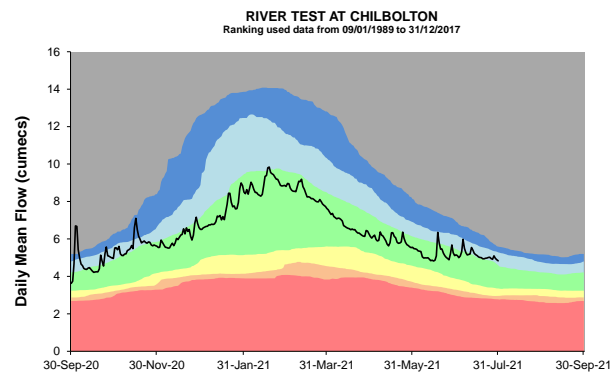
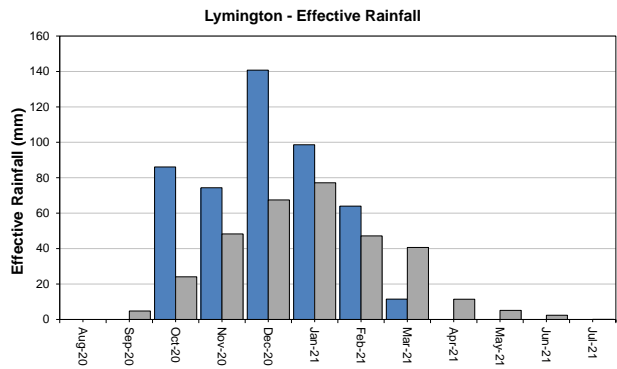
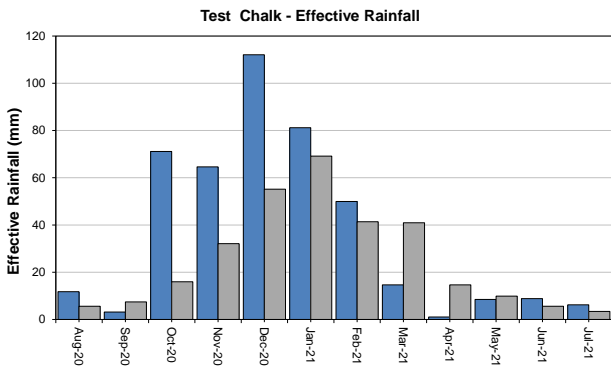
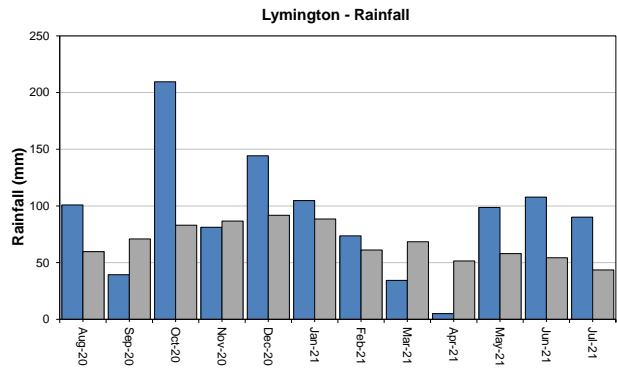
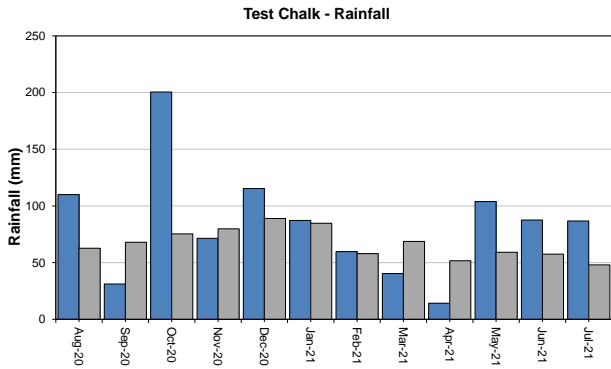


Total rainfall for hydrological areas across Solent and South Downs for the current month (up to 31 December), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Final NCIC (National Climate Information Centre) data based on the Met Office 5km gridded rainfall dataset derived from rain gauges (Source: Met Office © Crown Copyright, 2020). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100026380, 2021

West Hampshire – Page 1

Monthly total rainfall (mm)

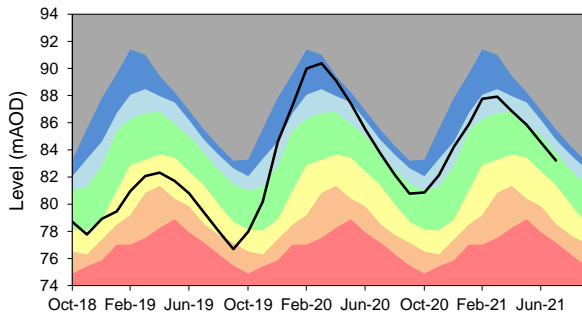
Long term average rainfall (mm)



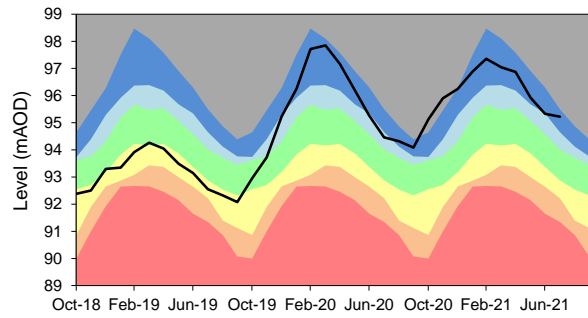
| | | | |
|--------------------|--------------|-------------------|-------------|
| Exceptionally high | Notably high | Above normal | Normal |
| Below normal | Notably low | Exceptionally low | Latest data |

West Hampshire – Page 2

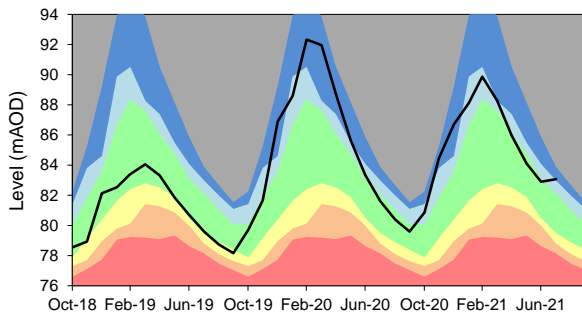
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2017



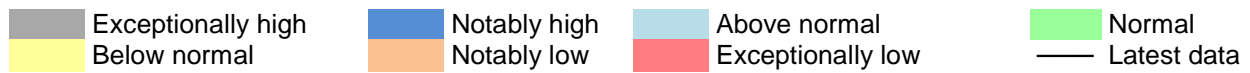
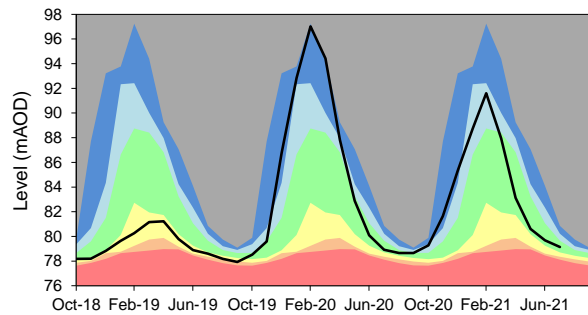
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2017



WEST MEON GWL - CHALK
 Ranking derived from data for the period Sep-1986 to Dec-2017



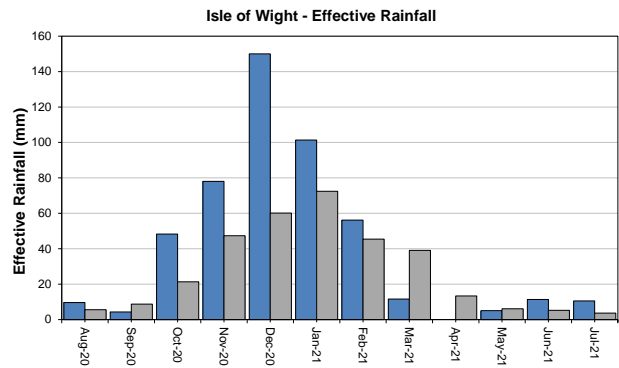
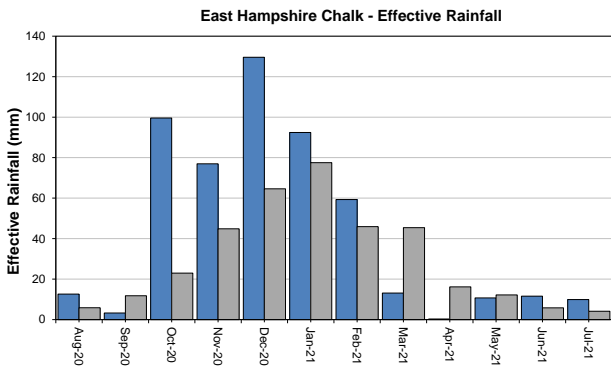
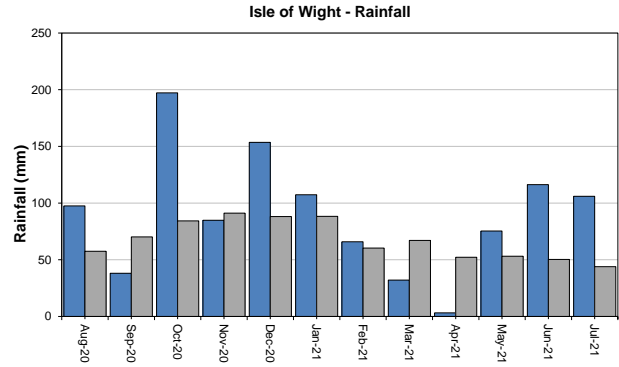
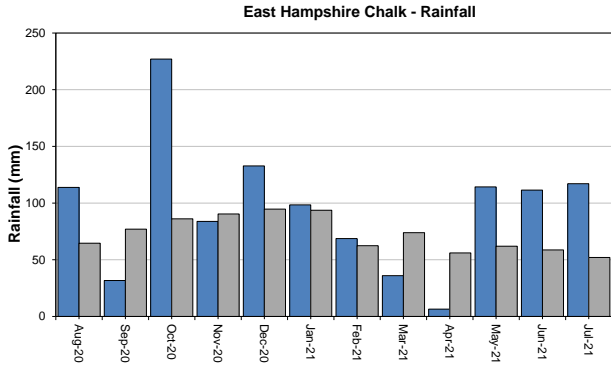
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2017



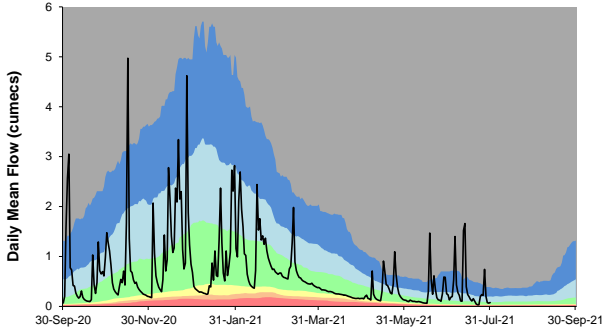
East Hampshire and Isle of Wight

Monthly total rainfall (mm)

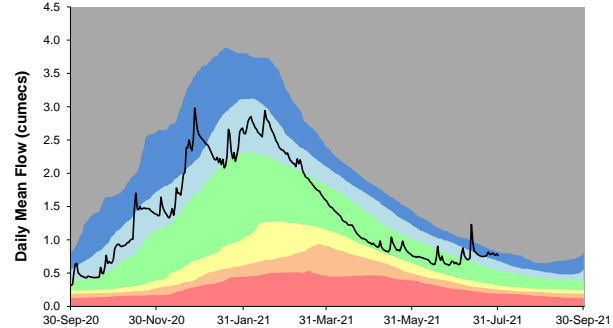
Long term average rainfall (mm)



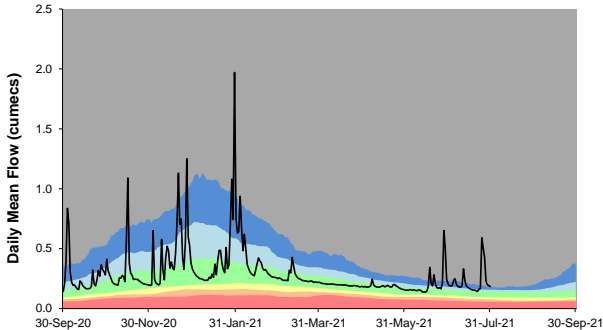
RIVER WALLINGTON AT NORTH FAREHAM
Ranking used data from 01/01/1992 to 31/12/2017



RIVER MEON AT MISLINGFORD
Ranking used data from 01/10/1958 to 31/12/2017



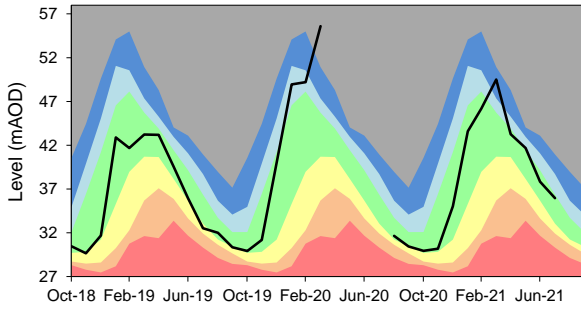
RIVER MEDINA AT BLACKWATER
Ranking used data from 01/05/1989 to 31/12/2017



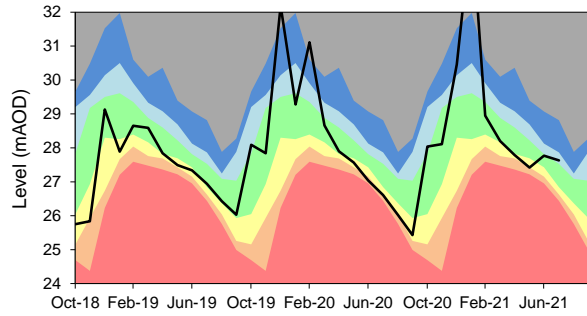
Exceptionally high
 Notably high
 Above normal
 Normal
 Below normal
 Notably low
 Exceptionally low
 Latest data

East Hampshire and Isle of Wight – Page 2

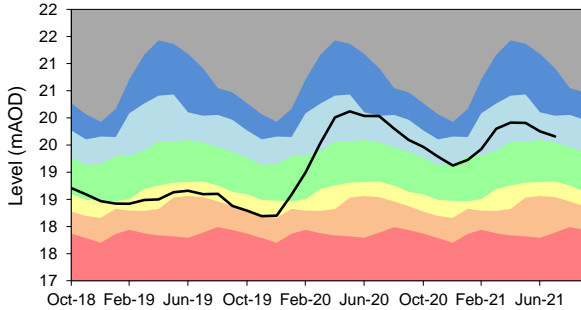
CATHERINGTON GWL - CHALK
 Ranking derived from data for the period Jan-1969 to Dec-2017



CARISBROOKE CASTLE GWL - CHALK
 Ranking derived from data for the period Aug-1977 to Dec-2017



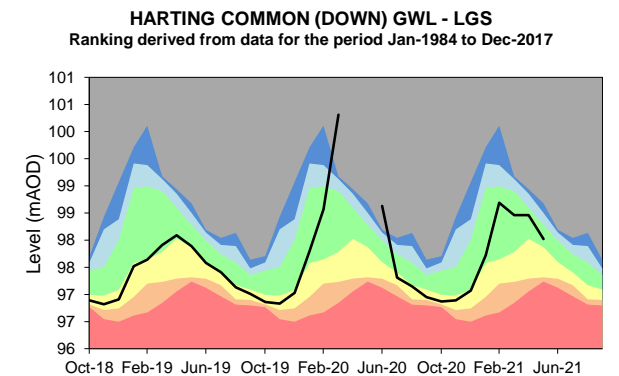
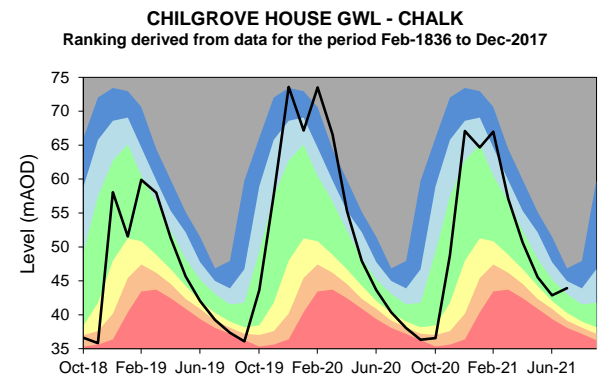
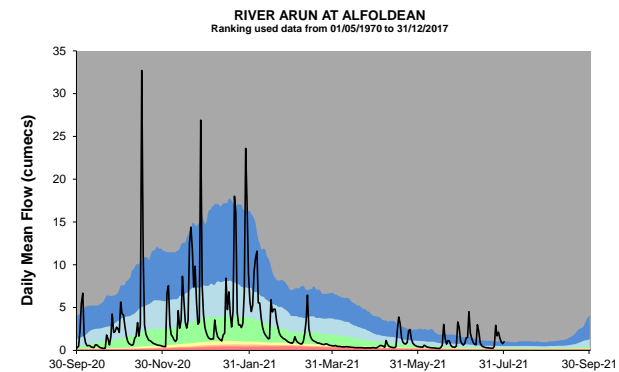
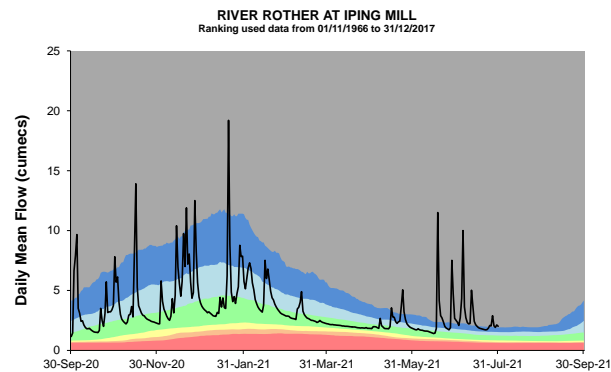
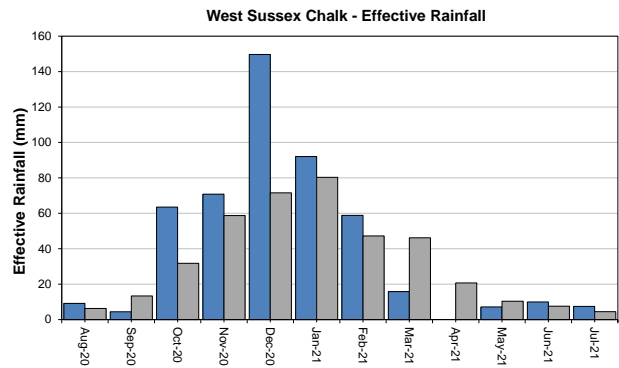
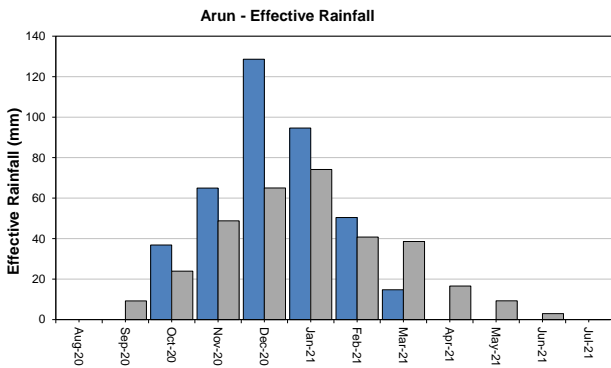
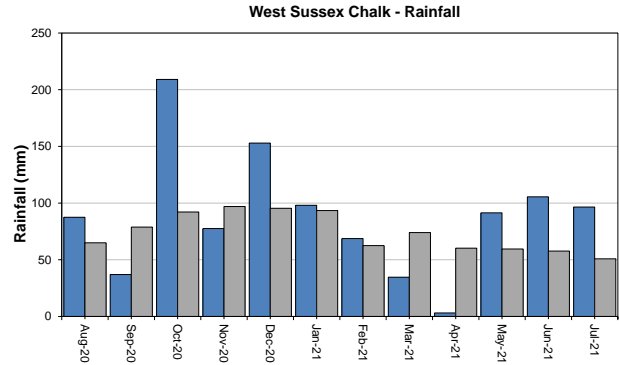
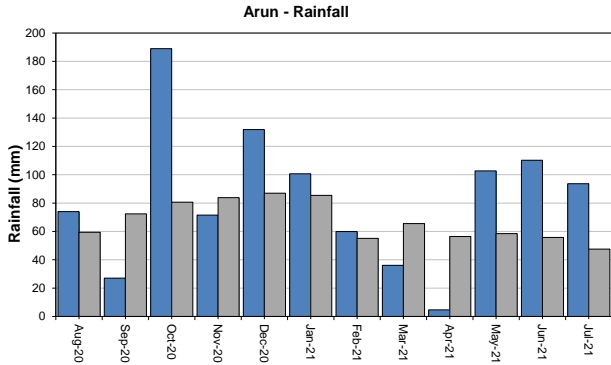
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2017



West Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)



Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

customer service line
03708 506 506

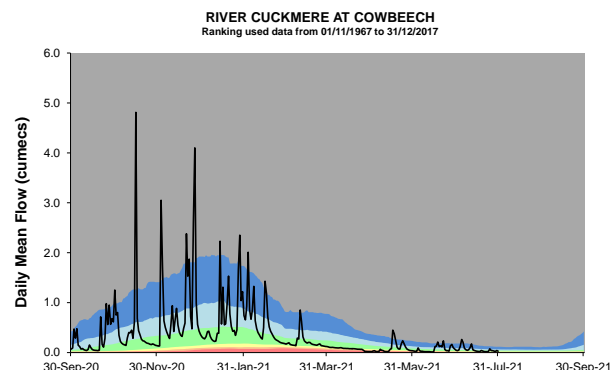
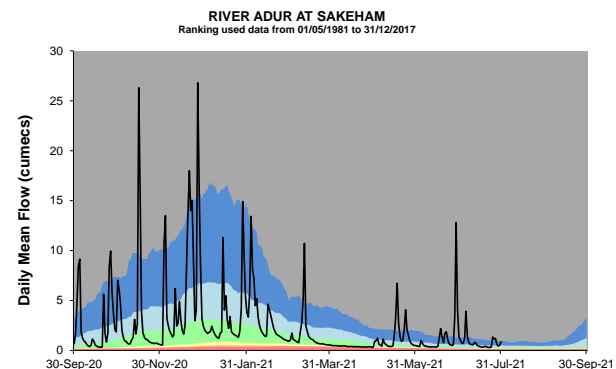
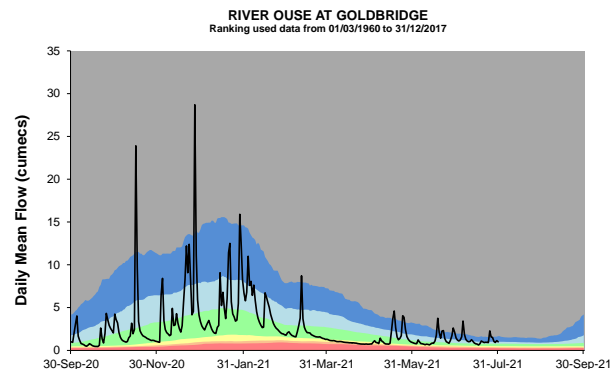
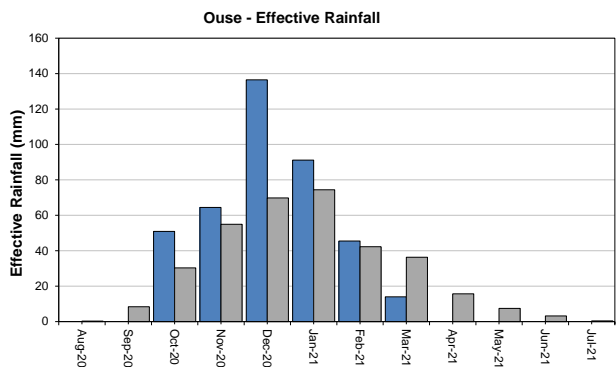
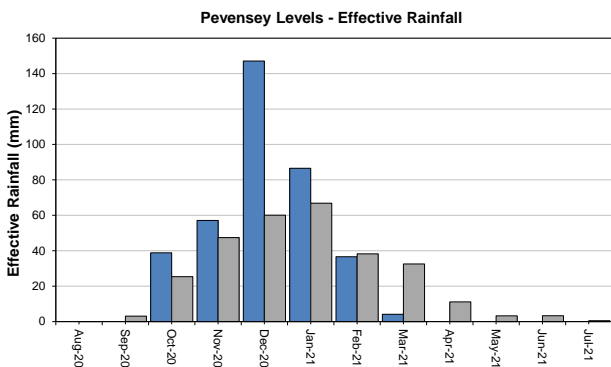
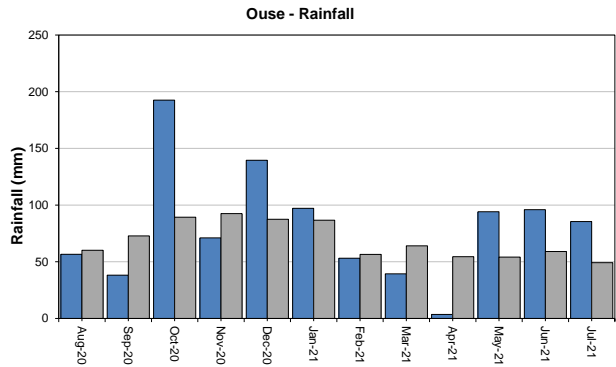
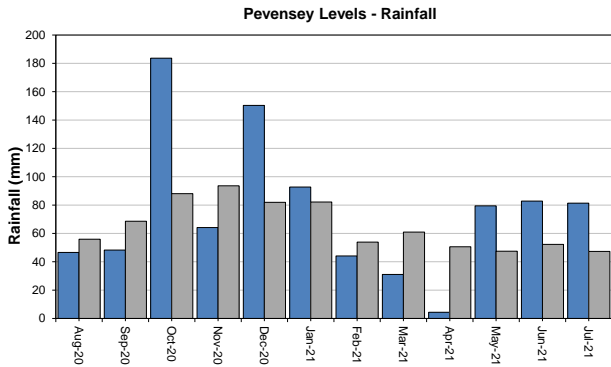
incident hotline
0800 80 70 60

floodline
0345 988 1188

East Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)



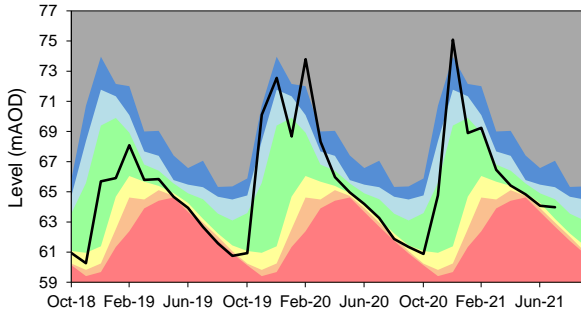
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

East Sussex – Page 2

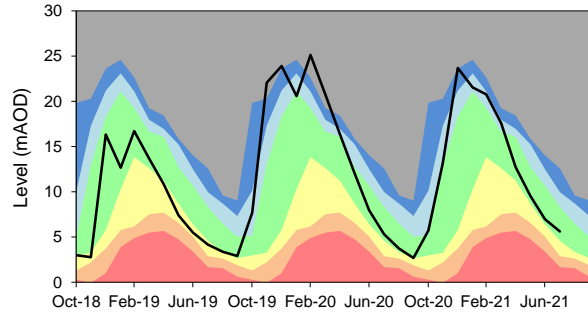
Monthly total rainfall (mm)

Long term average rainfall (mm)

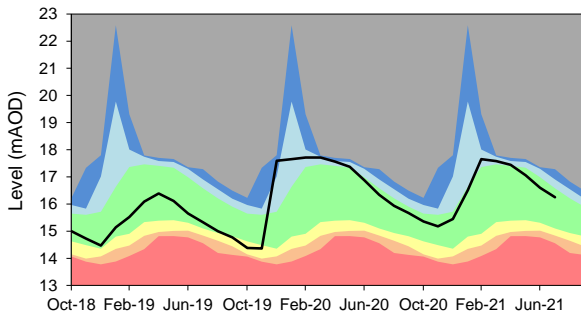
BEEADING HILL GWL - CHALK
Ranking derived from data for the period Sep-1979 to Dec-2017



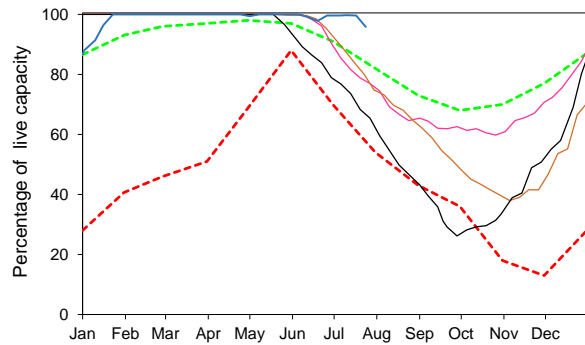
HOUNDEAN BOTTOM GWL - CHALK
Ranking derived from data for the period Jan-1977 to Dec-2017



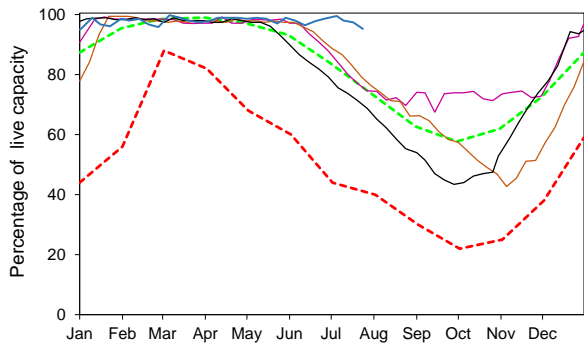
CORNISH FARM WIGDENS GWL - CHALK
Ranking derived from data for the period Mar-1981 to Dec-2017



South East Water - Ardingly Reservoir - Ouse



South East Water - Arlington Reservoir - Cuckmere



Summary of rainfall, effective rainfall and soil moisture deficits

Rainfall and effective rainfall

| Area | Rainfall (mm) | LTA rainfall (mm) | % of LTA | Effective rainfall (mm) | LTA effective rainfall (mm) | % of LTA |
|-------------------------------|---------------|-------------------|------------|-------------------------|-----------------------------|------------|
| Test Chalk | 87 | 46 | 188 | 6 | 3 | 182 |
| East Hampshire Chalk | 117 | 51 | 228 | 10 | 4 | 238 |
| West Sussex Chalk | 97 | 51 | 191 | 7 | 4 | 167 |
| East Sussex Chalk | 83 | 49 | 171 | 5 | 4 | 116 |
| Isle of Wight | 106 | 44 | 239 | 11 | 4 | 288 |
| Western Rother Greensand | 109 | 51 | 215 | 9 | 4 | 192 |
| Hampshire Tertiaries | 101 | 44 | 228 | 0 | 0 | 0 |
| Lymington | 90 | 43 | 208 | 0 | 0 | 0 |
| Sussex Coast | 81 | 42 | 193 | 0 | 0 | 0 |
| Arun | 93 | 48 | 195 | 0 | 0 | 0 |
| Adur | 76 | 46 | 165 | 0 | 0 | 0 |
| Ouse | 85 | 49 | 173 | 0 | 0 | 0 |
| Cuckmere | 90 | 49 | 184 | 0 | 1 | 0 |
| Pevensey Levels | 81 | 47 | 172 | 0 | 1 | 0 |
| Solent and South Downs | 93 | 47 | 196 | 3 | 2 | 179 |

Summer rainfall and effective rainfall

Summer totals for the period 1 April to the 31 July 2021

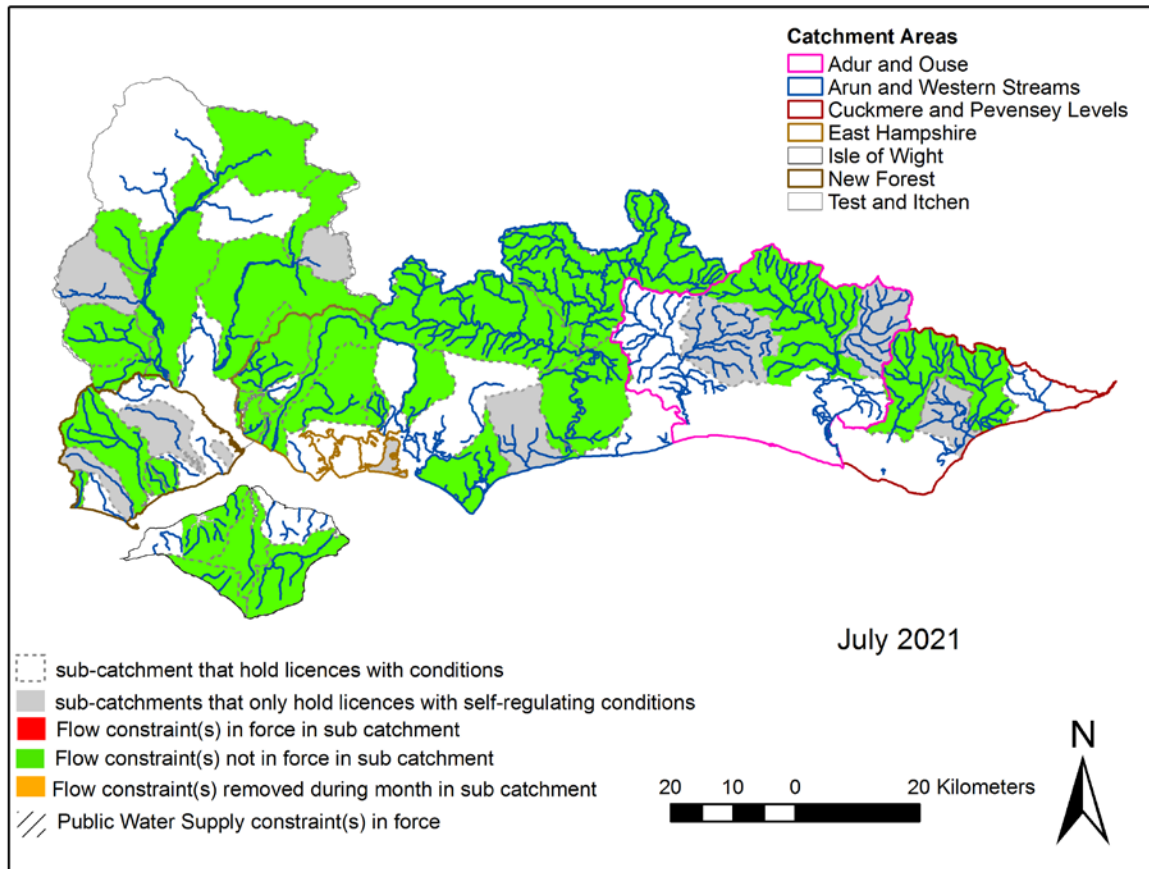
| Area | Rainfall (mm) | LTA rainfall (mm) | % of LTA | Effective rainfall (mm) | LTA effective rainfall (mm) | % of LTA |
|-------------------------------|---------------|-------------------|------------|-------------------------|-----------------------------|-----------|
| Test Chalk | 293 | 214 | 137 | 25 | 34 | 73 |
| East Hampshire Chalk | 349 | 225 | 155 | 33 | 38 | 85 |
| West Sussex Chalk | 297 | 229 | 130 | 25 | 43 | 57 |
| East Sussex Chalk | 279 | 213 | 131 | 20 | 35 | 58 |
| Isle of Wight | 301 | 199 | 151 | 27 | 28 | 95 |
| Western Rother Greensand | 348 | 231 | 150 | 31 | 52 | 60 |
| Hampshire Tertiaries | 312 | 204 | 153 | 0 | 16 | 0 |
| Lymington | 301 | 209 | 144 | 0 | 19 | 0 |
| Sussex Coast | 243 | 190 | 128 | 0 | 18 | 0 |
| Arun | 311 | 221 | 141 | 0 | 29 | 0 |
| Adur | 268 | 214 | 125 | 0 | 28 | 0 |
| Ouse | 279 | 219 | 127 | 0 | 27 | 0 |
| Cuckmere | 281 | 212 | 132 | 0 | 23 | 0 |
| Pevensey Levels | 248 | 199 | 124 | 0 | 18 | 0 |
| Solent and South Downs | 294 | 213 | 138 | 11 | 29 | 39 |

Soil Moisture Deficit

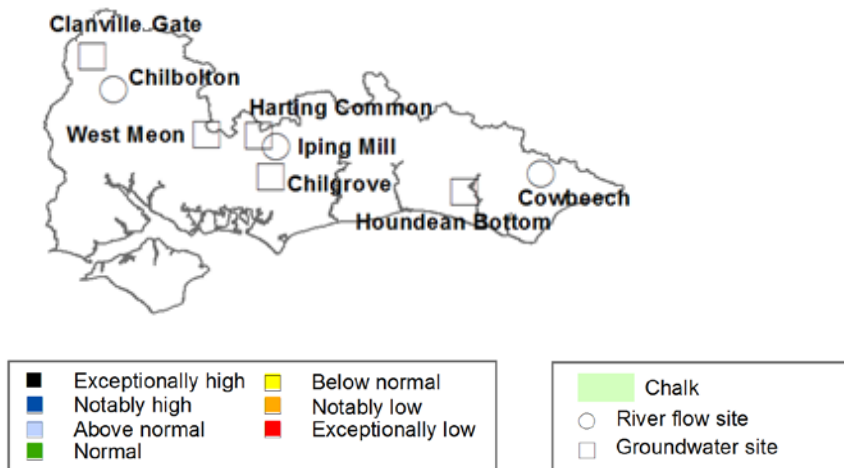
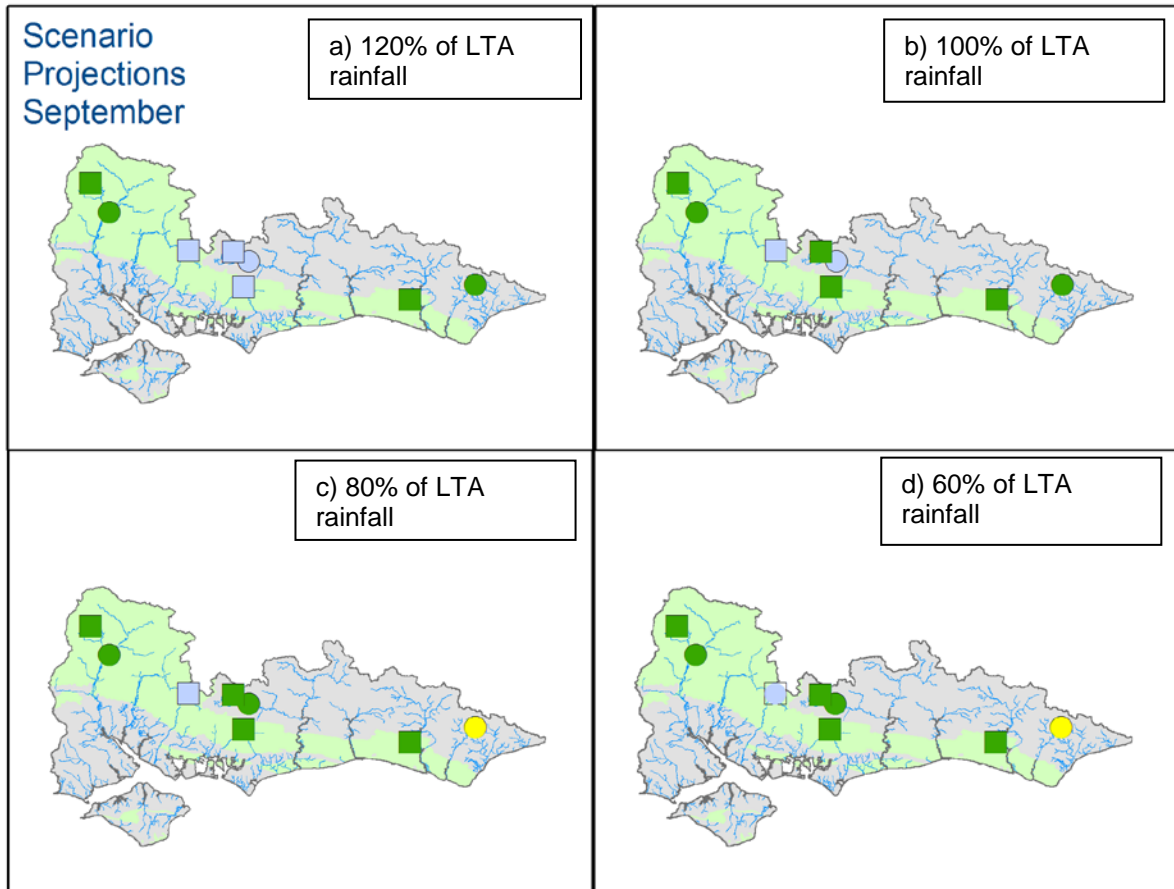
| Area | End of month SMD (mm) | End of month SMD LTA (mm) |
|-------------------------------|-----------------------|---------------------------|
| Test Chalk | 81 | 91 |
| East Hampshire Chalk | 38 | 87 |
| West Sussex Chalk | 72 | 92 |
| East Sussex Chalk | 84 | 94 |
| Isle of Wight | 61 | 99 |
| Western Rother Greensand | 35 | 83 |
| Hampshire Tertiaries | 44 | 93 |
| Lymington | 52 | 92 |
| Sussex Coast | 85 | 97 |
| Arun | 42 | 88 |
| Adur | 76 | 91 |
| Ouse | 67 | 85 |
| Cuckmere | 69 | 89 |
| Pevensey Levels | 90 | 92 |
| Solent and South Downs | 64 | 91 |

Environmental Impact

Flow Constraints



Forward look- river flow and groundwater September 2021



Projected river flows at key indicator sites up until the end of September 2021.
 Projected groundwater levels at key indicator sites at the end of September 2021.
 Projections based on four scenarios: 120% (a), 100% (b), 80% (c) and 60% (d) of long term average rainfall (Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum BGS © NERC Crown copyright. All rights reserved. Environment Agency 100026380 2021.

Glossary

Term

Aquifer

Areal average rainfall

Artesian

Artesian borehole

Cumecs

Effective rainfall

Flood Alert/Flood Warning

Groundwater

Long term average (LTA)

mAOD

MORECS

Naturalised flow

NCIC

Recharge

Reservoir gross capacity

Reservoir live capacity

Soil moisture deficit (SMD)

Definition

A geological formation able to store and transmit water.

The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).

The condition where the groundwater level is above ground surface but is prevented from rising to this level by an overlying continuous low permeability layer, such as clay.

Borehole where the level of groundwater is above the top of the borehole and groundwater flows out of the borehole when unsealed.

Cubic metres per second (m³s⁻¹)

The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).

Three levels of warnings may be issued by the Environment Agency. Flood Alerts indicate flooding is possible. Flood Warnings indicate flooding is expected. Severe Flood Warnings indicate severe flooding.

The water found in an aquifer.

The arithmetic mean calculated from the historic record, usually based on the period 1961-1990. However, the period used may vary by parameter being reported on (see figure captions for details).

Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).

Met Office Rainfall and Evaporation Calculation System. Met Office service providing real time calculation of evapotranspiration, soil moisture deficit and effective rainfall on a 40 x 40 km grid.

River flow with the impacts of artificial influences removed. Artificial influences may include abstractions, discharges, transfers, augmentation and impoundments.

National Climate Information Centre. NCIC area monthly rainfall totals are derived using the Met Office 5 km gridded dataset, which uses rain gauge observations.

The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).

The total capacity of a reservoir.

The capacity of the reservoir that is normally usable for storage to meet established reservoir operating requirements. This excludes any capacity not available for use (e.g. storage held back for emergency services, operating agreements or physical restrictions). May also be referred to as 'net' or 'deployable' capacity.

The difference between the amount of water actually in the soil and the amount of water the soil can hold. Expressed in depth of water (mm).

Categories

Exceptionally high

Notably high

Above normal

Normal

Below normal

Notably low

Exceptionally low

Value likely to fall within this band 5% of the time

Value likely to fall within this band 8% of the time

Value likely to fall within this band 15% of the time

Value likely to fall within this band 44% of the time

Value likely to fall within this band 15% of the time

Value likely to fall within this band 8% of the time

Value likely to fall within this band 5% of the time