

# Monthly water situation report

## Solent and South Downs Area

### Summary – August 2021

Solent and South Downs (SSD) had close to average rainfall in August receiving 92% (56mm) of the long term average (LTA) (61mm). Monthly mean river flows across SSD ranged from **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 close to average rainfall in August receiving 92% (56mm) of the LTA (61 mm). The central area of SSD received the highest rainfall with the East Hampshire Chalk areal unit receiving 101% (65mm) of the LTA (64mm) and Western Rother Greensand areal unit also receiving 101% (67mm) of LTA (66mm). The Lymington area unit on the western edge of SSD received the least rainfall recording 79% (47mm) of LTA (62mm), and the adjacent Test Chalk unit received the 2<sup>nd</sup> lowest with 82% (51mm) of LTA (63mm). The highest daily rainfall totals were observed on the 8<sup>th</sup> of August when Westergate RG (Sussex Coast) recorded 53.4 mm, Havant RG (Hampshire Tertiaries) recorded 43.3mm and Plumpton TBR (East Sussex Chalk) recorded 42.4mm. Despite the close to average monthly rainfall 80% of August's rain was recorded on the 6<sup>th</sup> and 8<sup>th</sup>. The four month totals (May-August) for the Isle of Wight and Western Rother Greensand areal units were the second highest on record (dating back to 1910) with 2007 being the highest.

### 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 **normal** to **exceptionally high**. Flows in the Lymington at Brockenhurst were **normal** for August. The River Test at Chilbolton and at Broadlands both recorded **above normal** flows. The River Medina at Blackwater was the only site recording **notably high** flows for this time of the year. All remaining reporting sites were in the **exceptionally high** range which is unusual for August. The monthly mean river flow recorded at and Iping Mill (Western Rother) and Sakeham (Adur) ranked as the highest August values on record. Cowbeech, Alfoldean, and Allbrook & Highbridge ranked 2<sup>nd</sup> highest, while Blackwater (Medina) recorded the 3<sup>rd</sup> highest August flows.

### Groundwater Levels

End of month groundwater levels ranged from **normal** to **notably high**. Groundwater levels at Preston Candover (East Hampshire Chalk), Chilgrove House (West Sussex Chalk), West Meon Hut GWL (East Hampshire Chalk), and Carisbrooke Castle (Isle of Wight) were **notably high** for August. The levels at Harting Common (Western Rother Greensand) and Youngwoods Copse (Isle of Wight) were **above normal**. **Normal** groundwater levels were reported at Clanville Gate and Lopcombe Corner (Test Chalk). The August groundwater levels at Preston Candover and Harting Common were the 3<sup>rd</sup> highest on records that span 46 and 37 years respectively.

### Reservoir Storage/Water Resource Zone Stocks

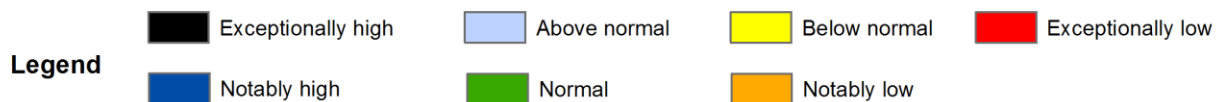
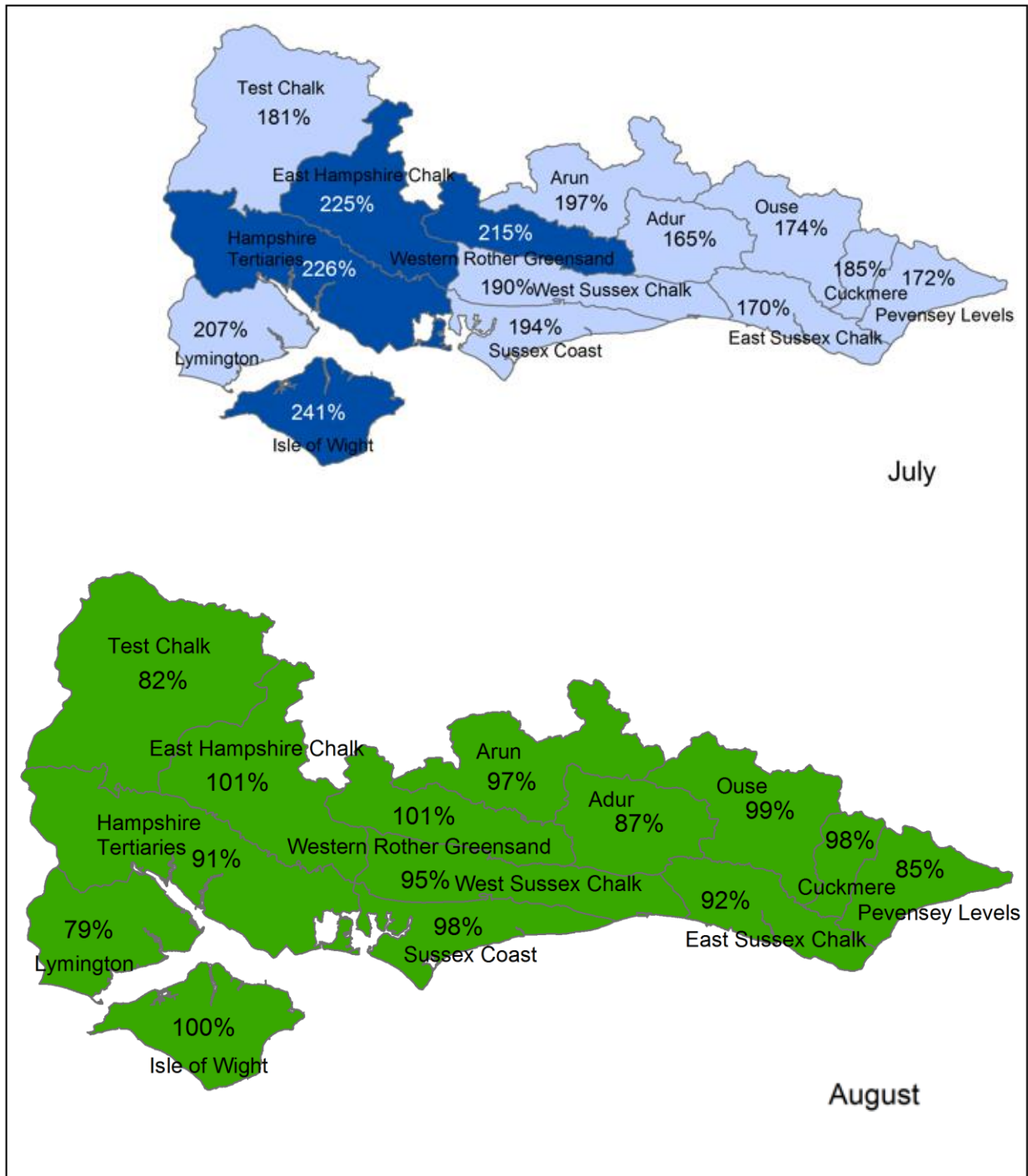
End of month reservoir stocks were above average at Ardingly Reservoir (Ouse) with 96.8% of total capacity (LTA 73.0%) and at Arlington Reservoir (Cuckmere) with 91.5% of total capacity (LTA 62.8%).

### Environmental Impact

There were no abstraction licence restrictions in force in August. There were 8 flood alerts and 2 flood warnings were issued in SSD in August; 5 alerts and 1 warning in Sussex, 3 alerts and 1 warning on the Isle of Wight.

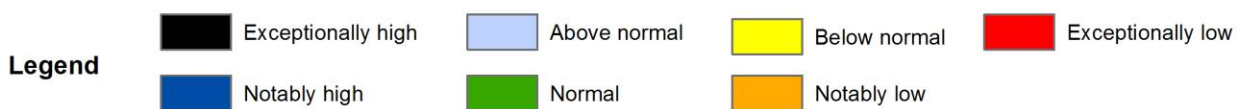
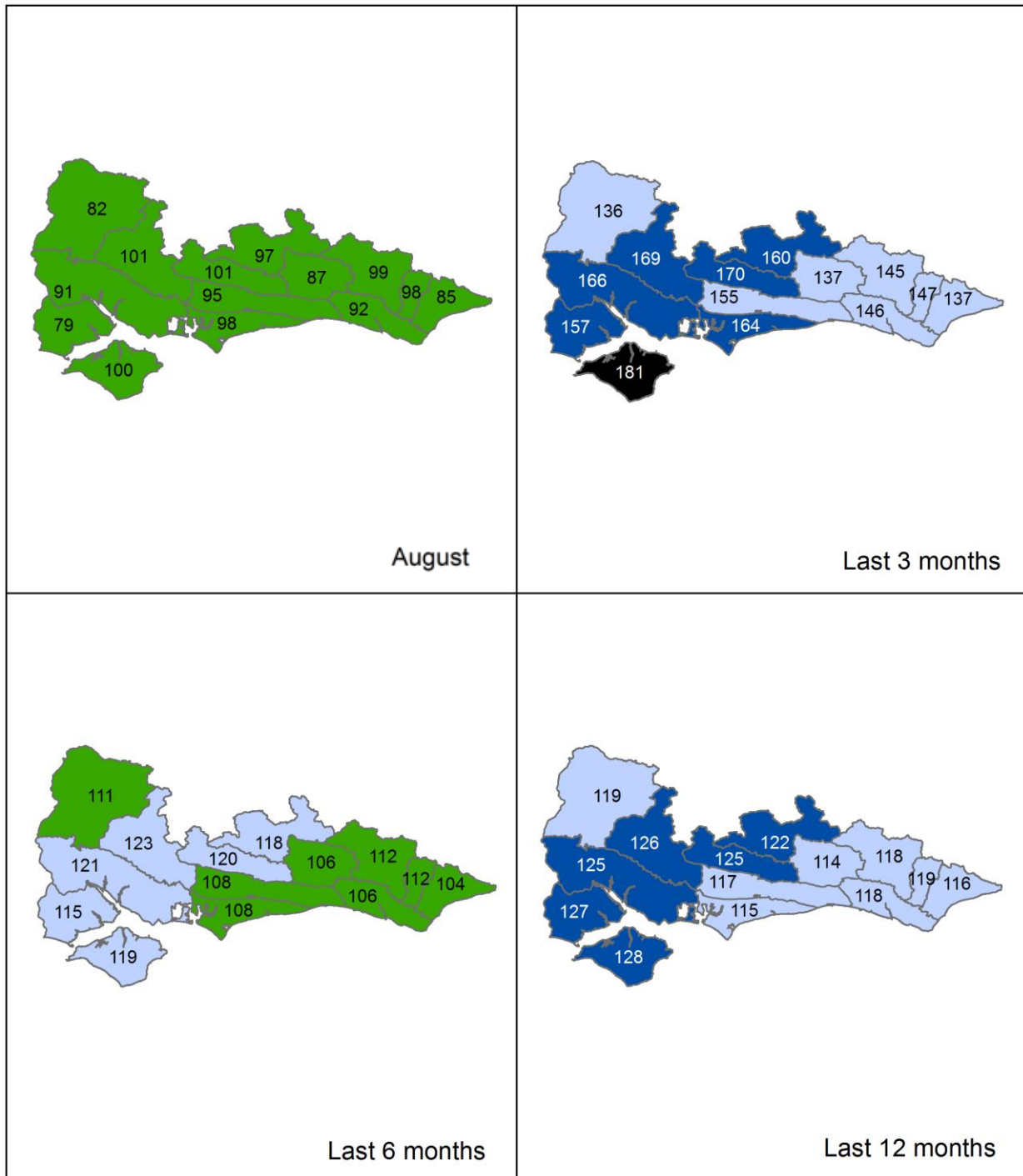
Author: [HydrologySSD](#)

# Rainfall Map 1



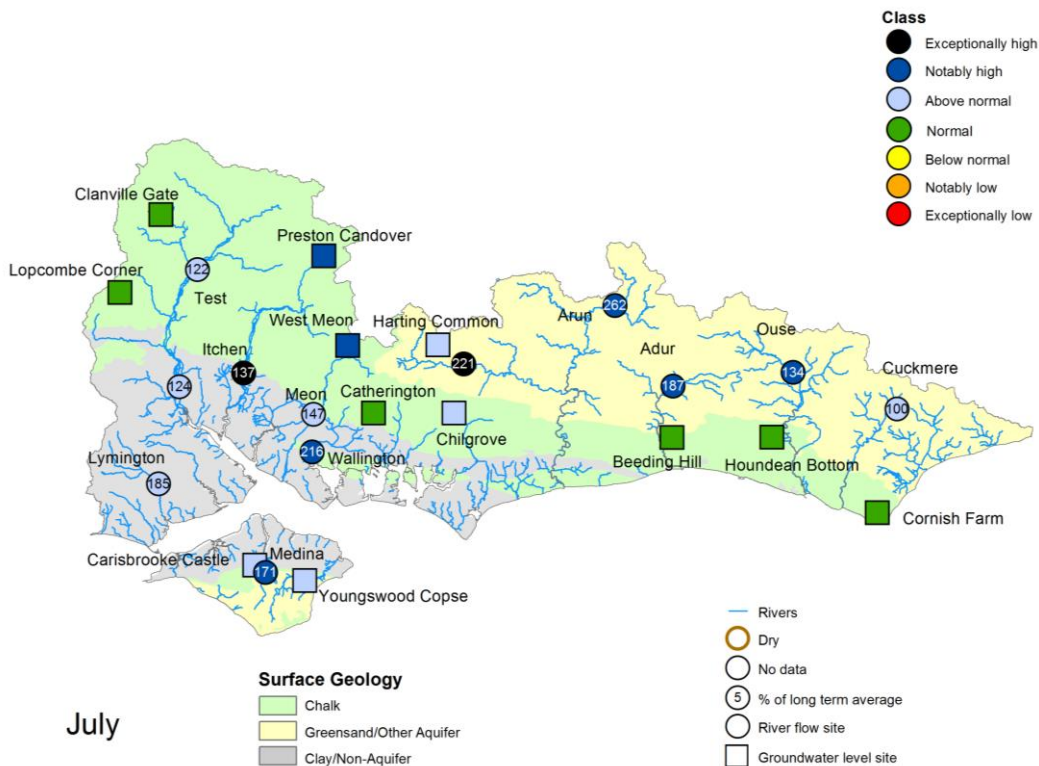
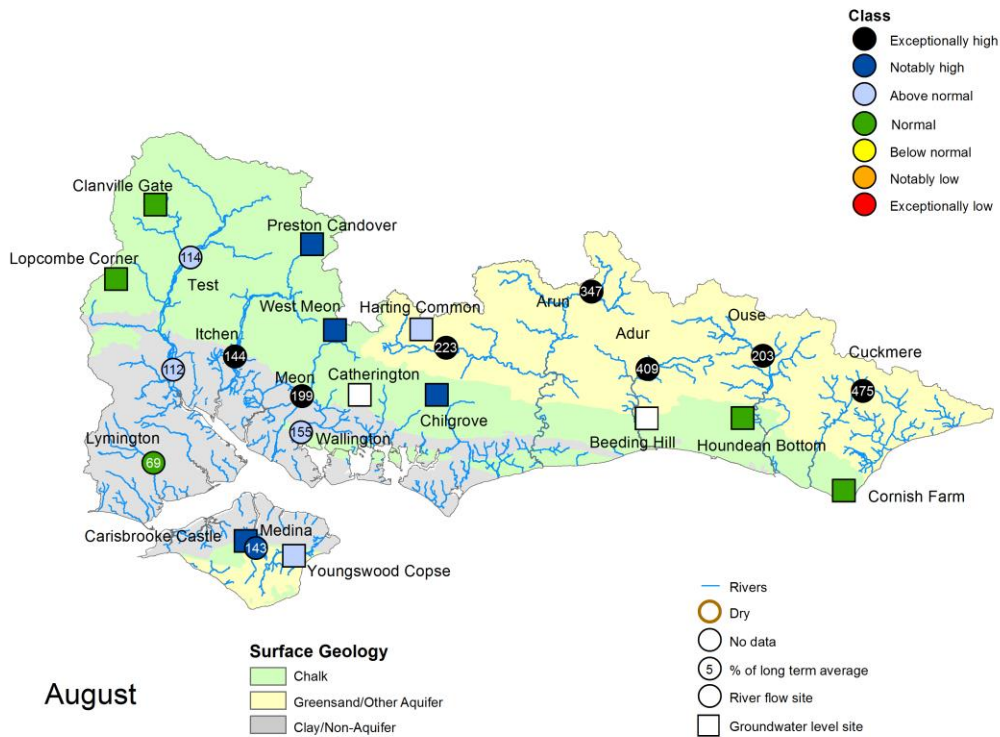
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material 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 August), 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

# River Flow and Groundwater Status Map



Groundwater site status based on end of month level. Surface water site status based on mean monthly flow.

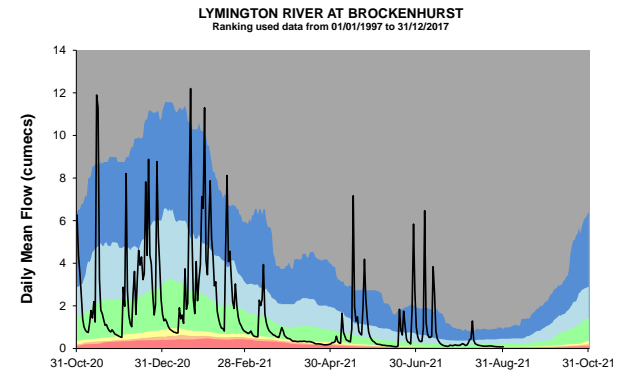
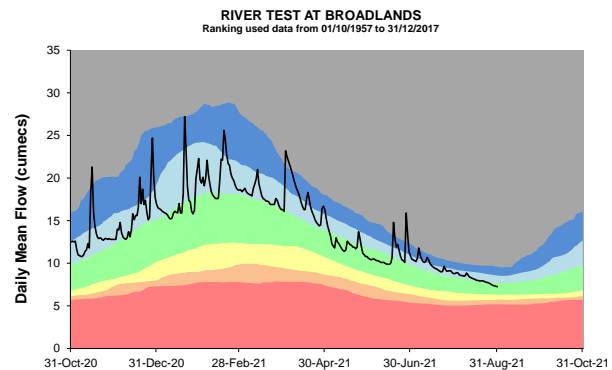
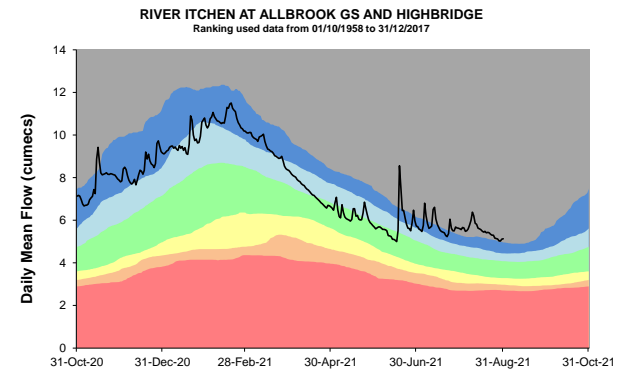
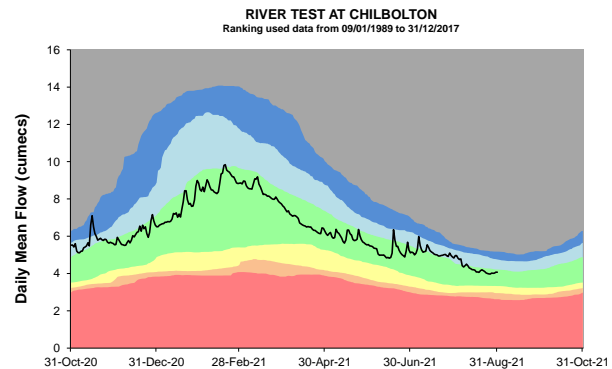
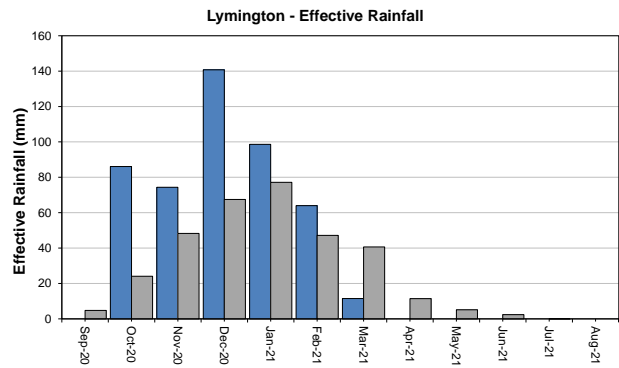
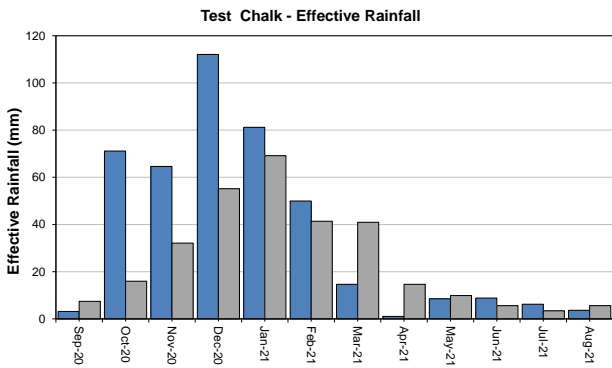
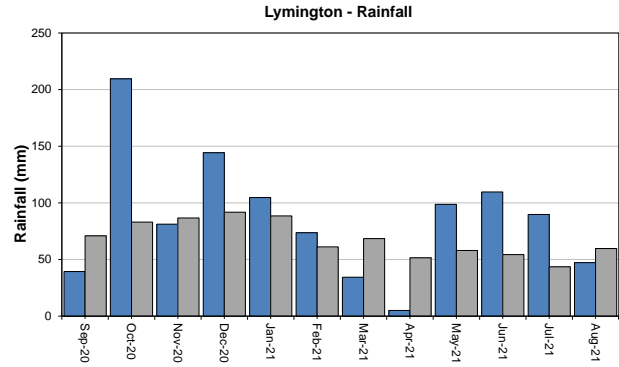
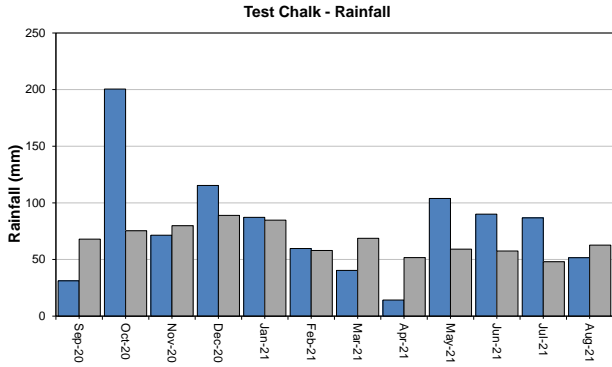
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# West Hampshire – Page 1

Monthly total rainfall (mm)

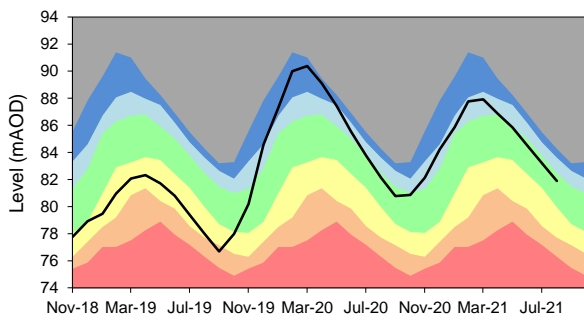
Long term average rainfall (mm)



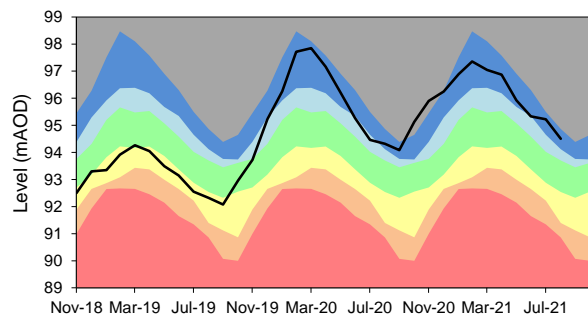
Exceptionally high    
  Notably high    
  Above normal    
  Normal  
 Below normal    
  Notably low    
  Exceptionally low    
  Latest data

# West Hampshire – Page 2

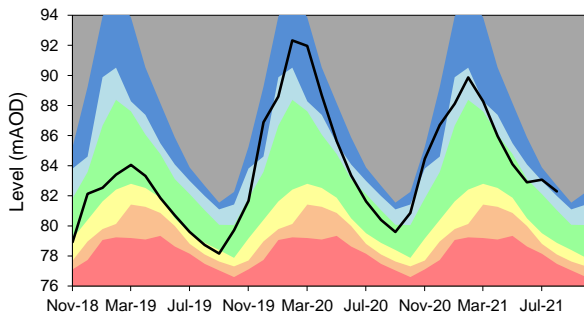
**CLANVILLE GATE GWL - CHALK**  
 Ranking derived from data for the period Mar-1963 to Dec-2017



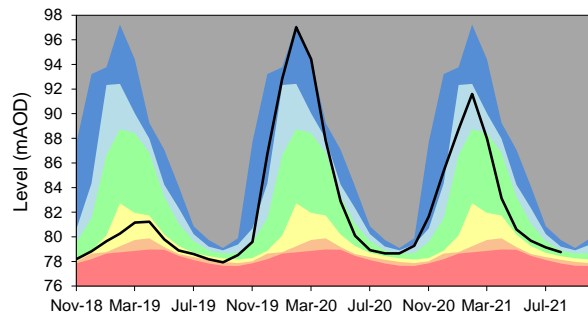
**PRESTON CANDOVER GWL - CHALK**  
 Ranking derived from data for the period Jan-1975 to Dec-2017



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



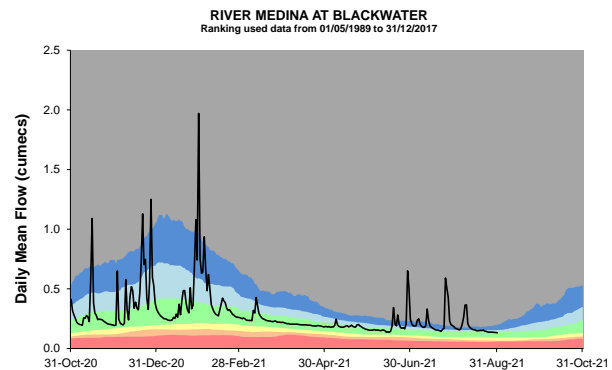
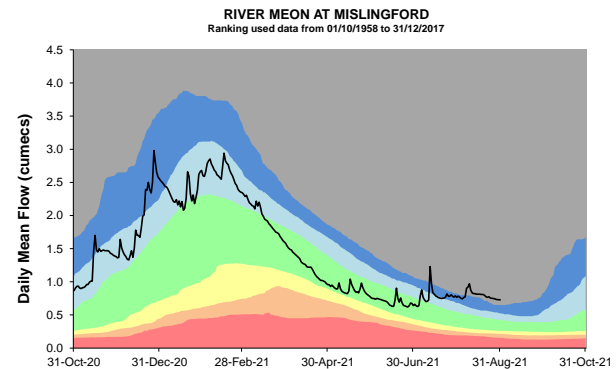
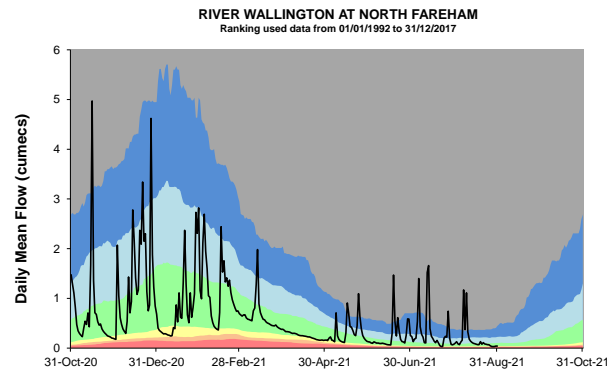
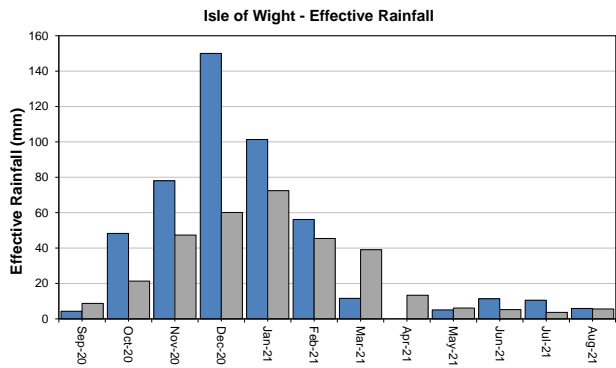
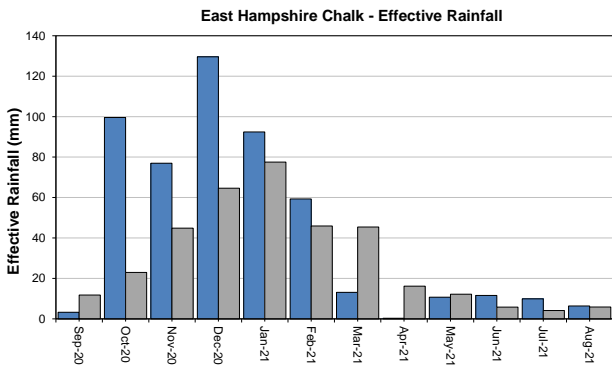
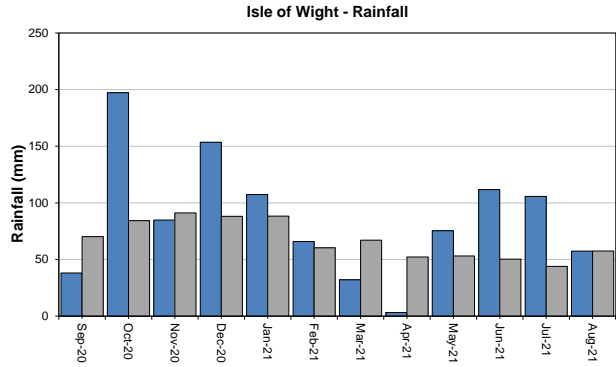
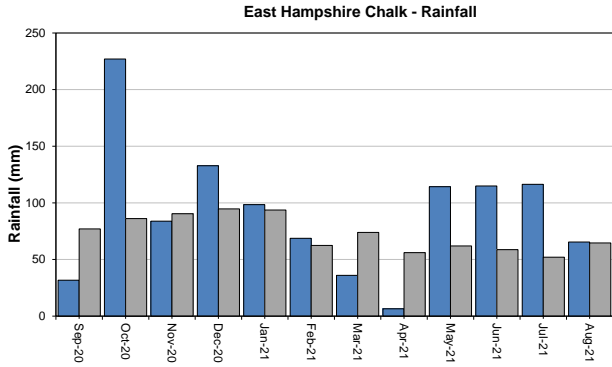
**LOPCOMBE CORNER GWL - CHALK**  
 Ranking derived from data for the period Apr-1963 to Dec-2017



# East Hampshire and Isle of Wight

Monthly total rainfall (mm)

Long term average rainfall (mm)



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

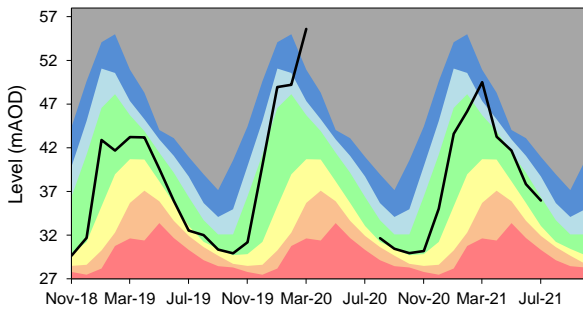
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incident hotline  
0800 80 70 60

floodline  
0345 988 1188

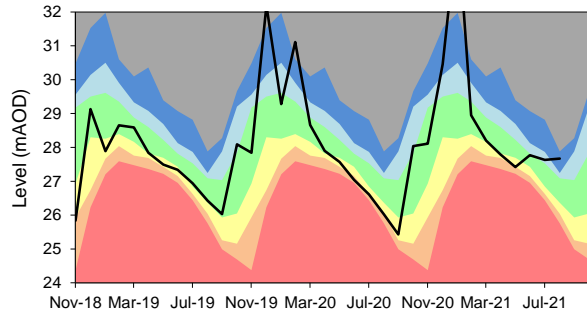
# East Hampshire and Isle of Wight – Page 2

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

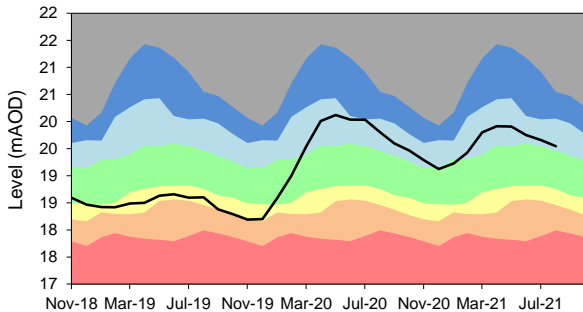


No dip this month due to access issues

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



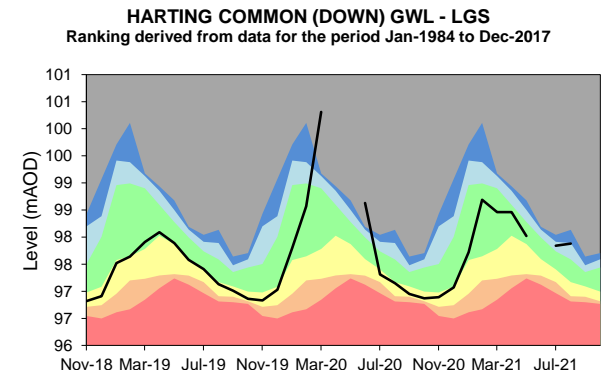
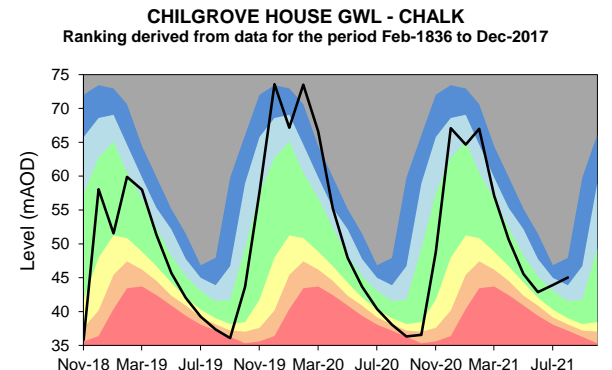
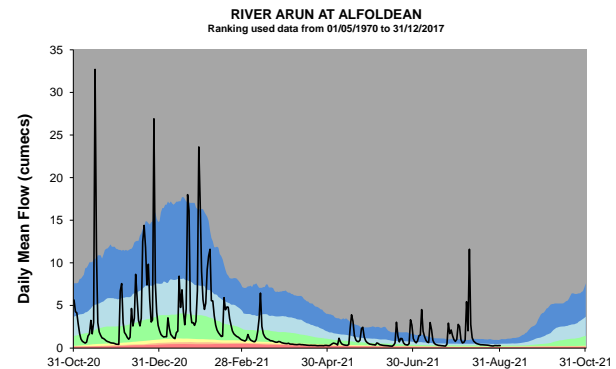
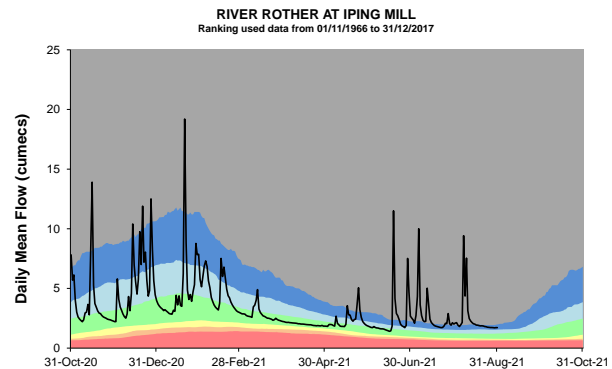
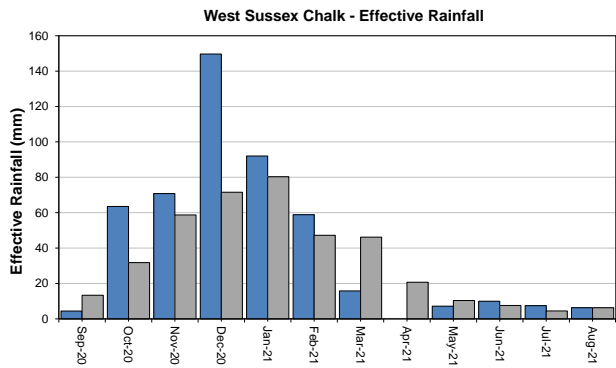
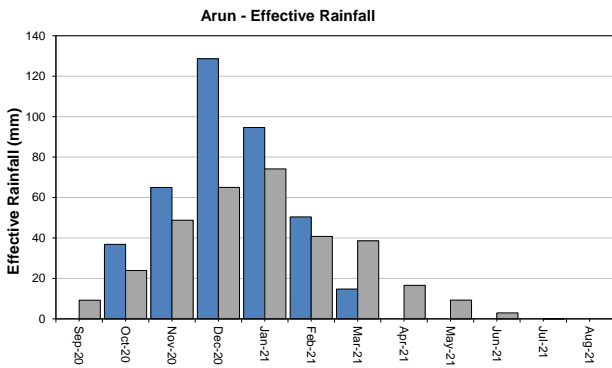
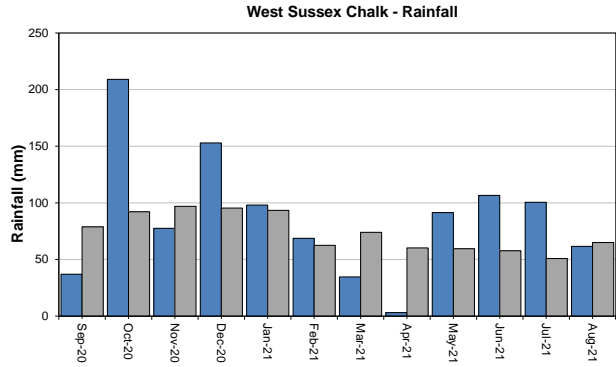
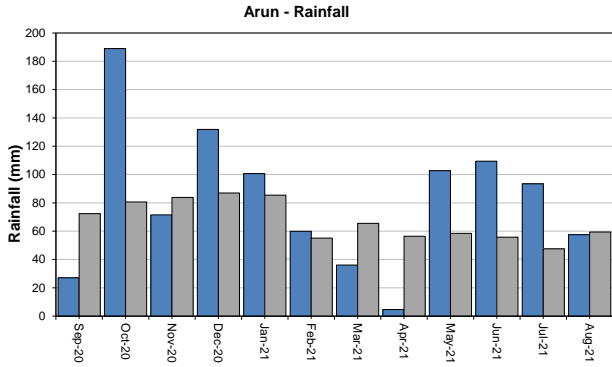
**YOUNGWOOD COPSE GWL - LGS**  
 Ranking derived from data for the period Feb-1978 to Dec-2017



# 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

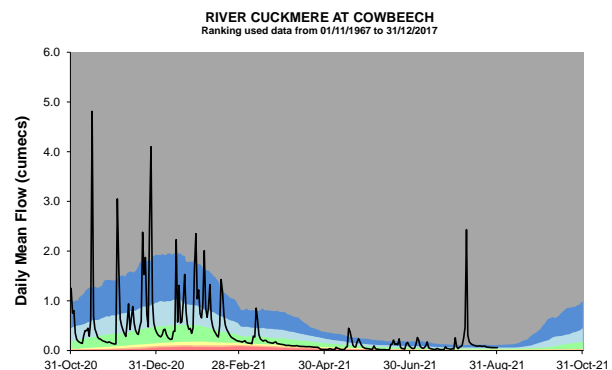
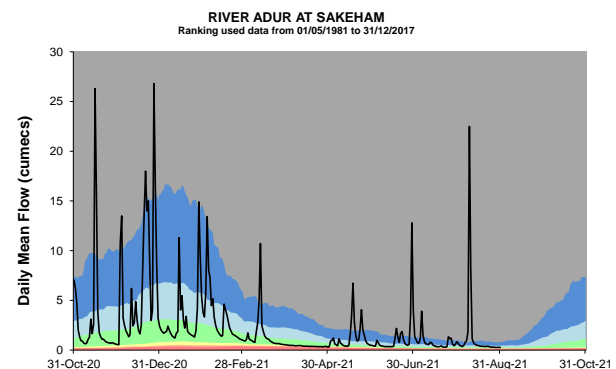
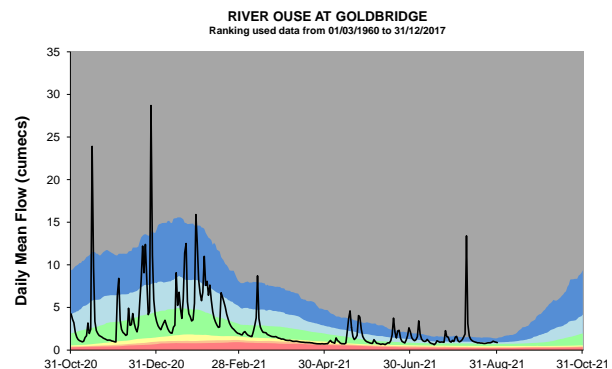
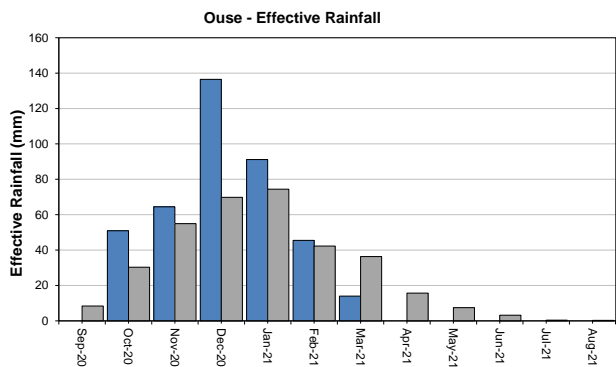
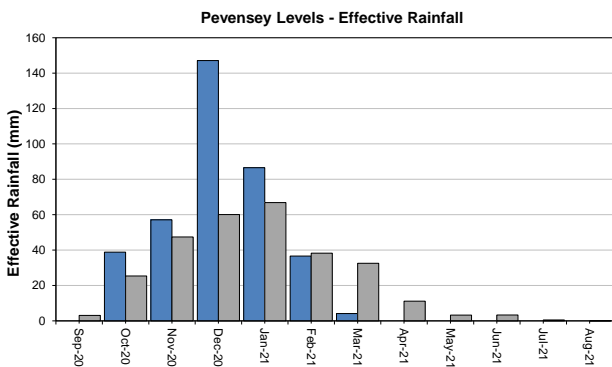
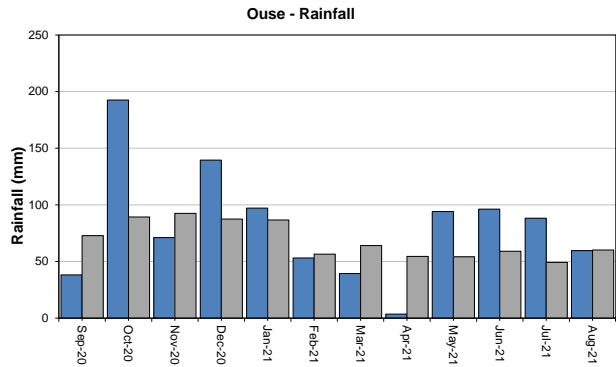
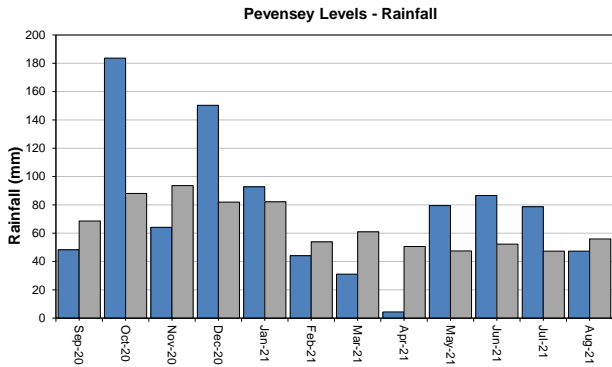
incident hotline  
0800 80 70 60

floodline  
0345 988 1188

# East Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)



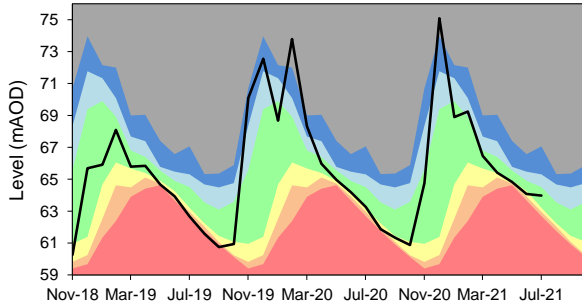
Exceptionally high    
  Notably high    
  Above normal    
  Normal  
 Below normal    
  Notably low    
  Exceptionally low    
 — Latest data

# East Sussex – Page 2

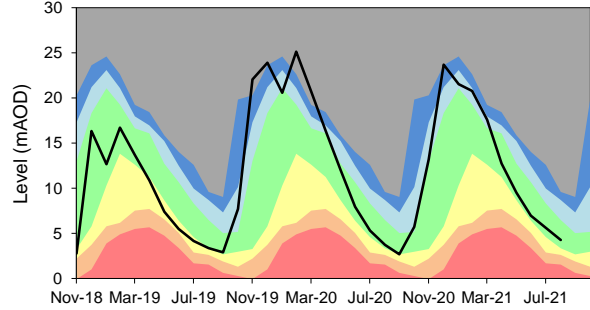
Monthly total rainfall (mm)

Long term average rainfall (mm)

**BEEDING HILL GWL**  
Ranking derived from data for the period Sep-1979 to Dec-2017

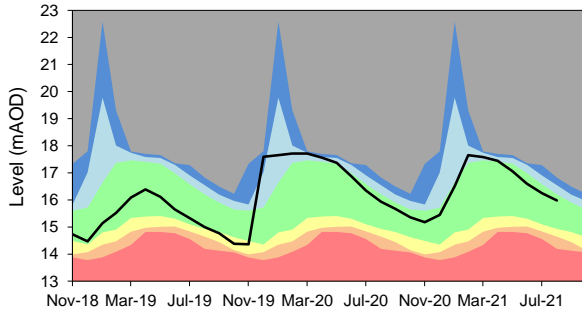


**HOUNDEAN BOTTOM GWL - CHALK**  
Ranking derived from data for the period Jan-1977 to Dec-2017

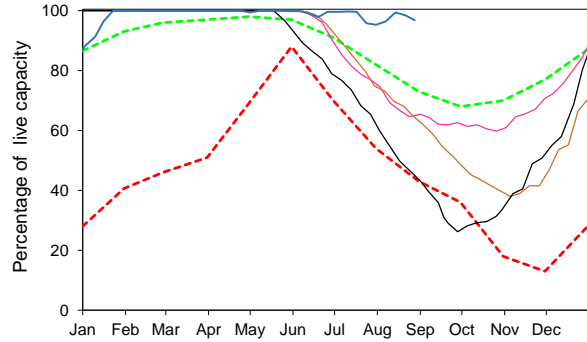


Beeding Hill undergoing instrumentation checks

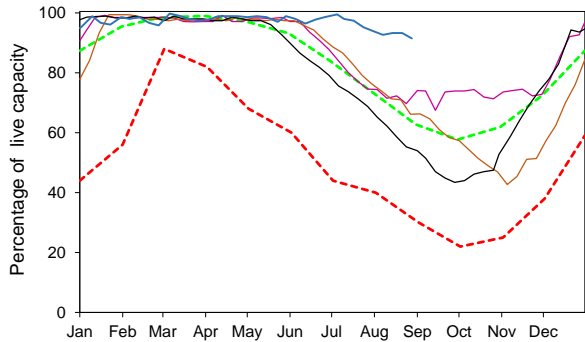
**CORNISH FARM WIGDENS GWL - CHALK**  
Ranking derived from data for the period Mar-1981 to Dec-2017



South East Water - Ardingly Reservoir - Ouse



South East Water - Arlington Reservoir - Cuckmere



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

## 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	51	63	82	4	6	65
East Hampshire Chalk	65	64	101	6	6	108
West Sussex Chalk	61	66	95	6	6	101
East Sussex Chalk	55	61	92	4	6	75
Isle of Wight	57	59	100	6	6	105
Western Rother Greensand	67	66	101	7	7	96
Hampshire Tertiaries	54	60	91	0	0	0
Lymington	47	62	79	0	0	0
Sussex Coast	52	54	98	0	0	0
Arun	58	61	97	0	0	0
Adur	52	60	87	0	0	0
Ouse	59	61	99	0	0	0
Cuckmere	59	62	98	0	0	0
Pevensey Levels	47	57	85	0	0	0
<b>Solent and South Downs</b>	<b>56</b>	<b>61</b>	<b>92</b>	<b>2</b>	<b>3</b>	<b>91</b>

### Summer rainfall and effective rainfall

Summer totals for the period 1 April to the 31<sup>st</sup> August 2021

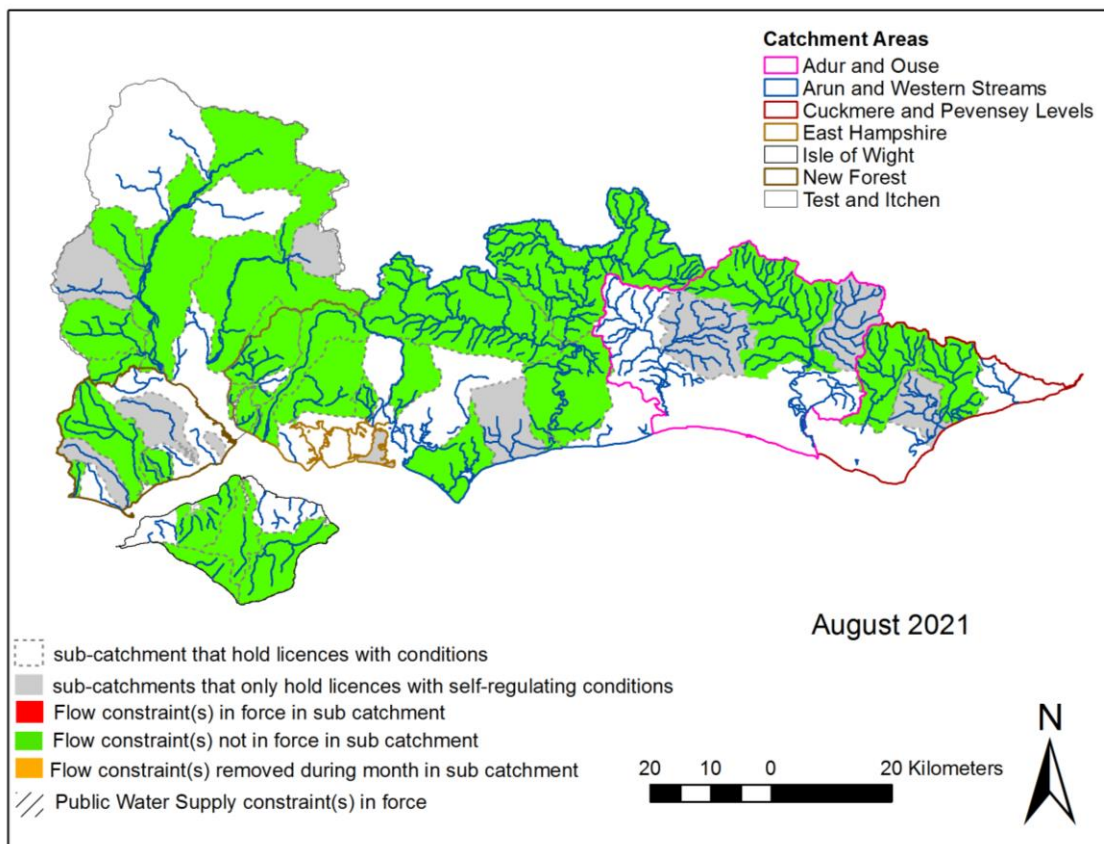
Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	344	277	124	28	39	72
East Hampshire Chalk	414	289	143	39	44	88
West Sussex Chalk	358	295	121	31	49	63
East Sussex Chalk	334	273	122	25	41	60
Isle of Wight	358	258	139	33	34	97
Western Rother Greensand	414	297	139	39	60	65
Hampshire Tertiaries	366	265	138	0	16	0
Lymington	349	270	129	0	19	0
Sussex Coast	295	245	121	0	18	0
Arun	368	282	131	0	29	0
Adur	320	275	116	0	28	0
Ouse	339	280	121	0	27	0
Cuckmere	341	274	124	0	23	0
Pevensey Levels	295	257	115	0	18	0
<b>Solent and South Downs</b>	<b>350</b>	<b>274</b>	<b>128</b>	<b>14</b>	<b>32</b>	<b>44</b>

## Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	95	97
East Hampshire Chalk	65	93
West Sussex Chalk	93	96
East Sussex Chalk	100	102
Isle of Wight	96	107
Western Rother Greensand	59	90
Hampshire Tertiaries	77	96
Lymington	88	94
Sussex Coast	104	105
Arun	68	92
Adur	95	95
Ouse	85	88
Cuckmere	90	93
Pevensey Levels	104	98
<b>Solent and South Downs</b>	<b>87</b>	<b>96</b>

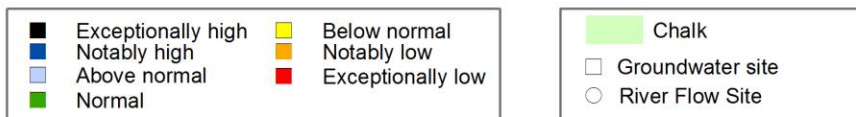
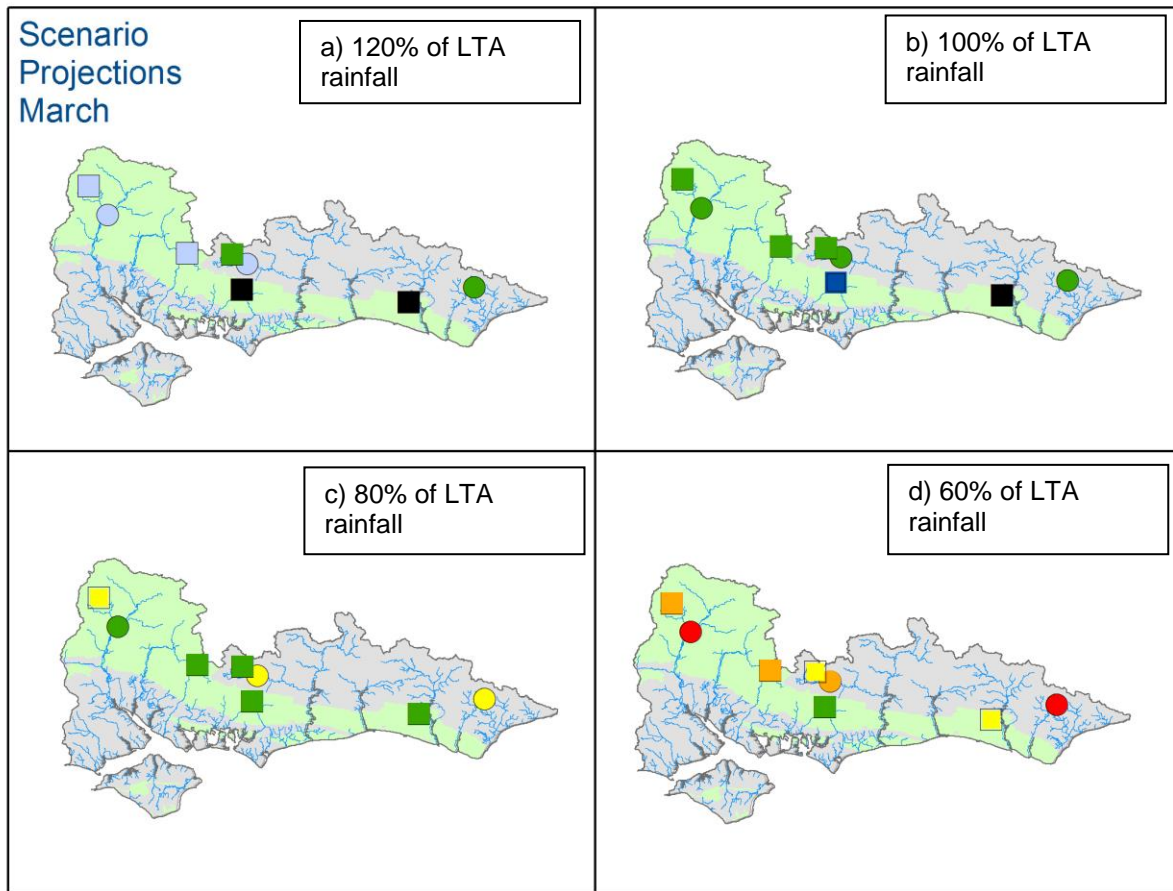
# Environmental Impact

## Flow Constraints



Catchment	No. licences with conditions currently operational in Jul	01-Aug	03-Aug	10-Aug	17-Aug	24-Aug	31-Aug
		START	WK1	WK2	WK3	WK4	END
		Number at Start of the month in force	No. licences with condition in Force in Jul	No. licences with Flow Condition in Force in Jul	No. licences with Flow Condition in Force in Jul	No. licences with Flow Condition in Force in Jul	Number at End of the month in force
Adur & Ouse	3	0	0	0	0	0	0
Arun & Western	39	0	0	0	0	0	0
Cuckmere & Pevensey	7	0	0	0	0	0	0
East Hampshire	21	0	0	0	0	0	0
IOW	17	0	0	0	0	0	0
New Forest	16	0	0	0	0	0	0
Test & Itchen	24	0	0	0	0	0	0
<b>Total in SSD</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Forward look- river flow and groundwater March 2022



Projected river flows at key indicator sites up until the end of March 2022. Projected groundwater levels at key indicator sites at the end of March 2022. 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 ( $\text{m}^3\text{s}^{-1}$ )

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