

Monthly water situation report

Solent and South Downs Area

Summary – July 2020

Solent and South Downs (SSD) had below average rainfall in July, receiving 69% (33mm) of the Long Term Average (LTA) (47mm). Monthly mean river flows across SSD ranged from **notably low** to **normal**. End of month groundwater levels ranged from **notably low** to **above normal**. Soil moisture deficits across Solent and South Downs ended the month greater than the long term average. End of month reservoir stocks were below average at both Ardingly Reservoir (Ouse Catchment) and Arlington Reservoir (Cuckmere catchment).

Rainfall

Solent and South Downs (SSD) had **below average** rainfall in July, receiving 69% (33mm) of the LTA (47mm). The East Sussex Chalk areal unit had the highest monthly total with 38mm, 78% of LTA (49mm), closely followed by the Test Chalk areal unit which had 37mm, 78% of LTA (48mm). The lowest rainfall occurred in the Sussex Coast areal unit receiving 23mm, 54% of LTA (42mm). The 25th July was the wettest day of the month with the highest daily total of 19mm recorded at Lyndhurst (Lymington) and Plumpton (East Sussex Chalk). Despite the lower than average rainfall total for the month there were only a few completely dry days across the area. The May to June 3 month total for the Adur catchment ranks as the 4th driest in a record going back to 1891. For the SSD as whole the total for this period ranks 7th on record.

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs ended the month greater than the long term average. Soils remain much drier than normal.

River Flows

Monthly mean river flows across SSD ranged from **notably low** to **normal**. **Notably Low** monthly mean flows were recorded for the River Arun at Alfoldean. **Below normal** monthly means were recorded for the River Lymington at Brockenhurst and the Wallington River at North Fareham. The remaining reported sites recorded monthly mean flows in the **normal** range.

Groundwater Levels

End of month groundwater levels ranged from **notably low** to **above normal**. The majority of reported sites recorded levels in the **normal** range. Exceptions were the levels at Youngwoods Copse (Isle of Wight) and Preston Candover (East Hants Chalk) which were **above normal**. The level at Harting Common (Western Rother Greensand) declined to the **below normal** range and at Carisbrooke Castle (Isle of Wight) the end of month level was **notably low**. Catherington observation borehole was not dipped due to Covid-19 restrictions.

Reservoir Storage/Water Resource Zone Stocks

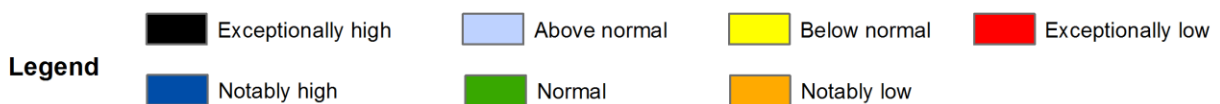
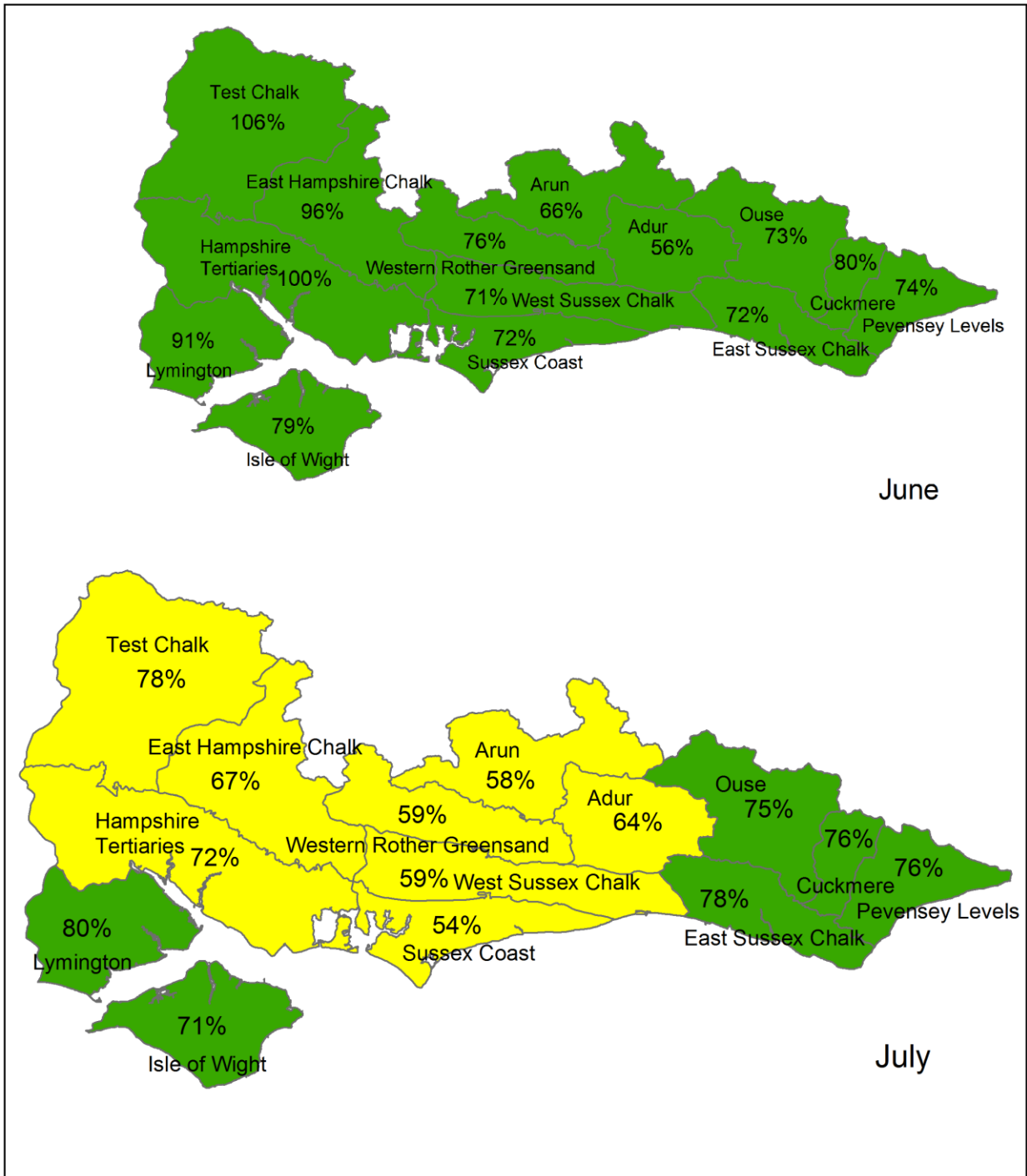
End of month reservoir stocks were **below** average at Ardingly Reservoir (Ouse Catchment) with 60% of total capacity (LTA 82%) and also **below** average at Arlington Reservoir (Cuckmere catchment) with 65% of total capacity (LTA 73%).

Environmental Impact

There were a total of 12 licences with restrictions in force during July. No Flood Warnings or Alerts were issued.

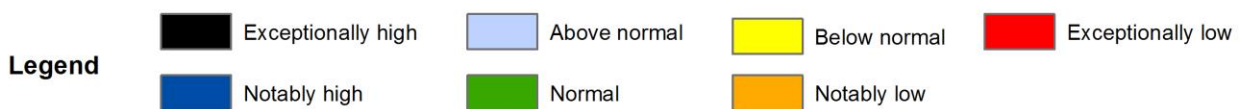
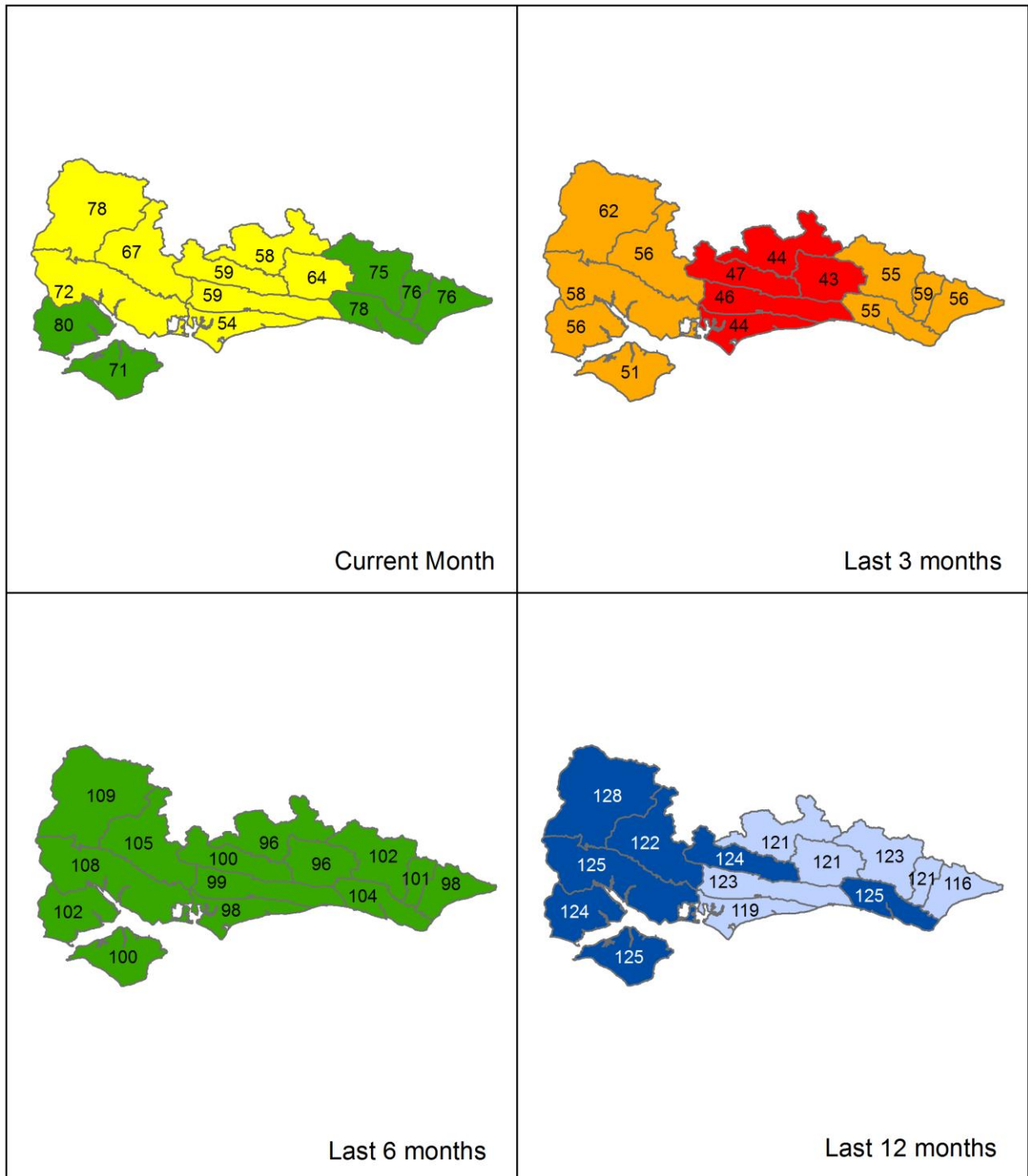
Author: [HydrologySSD](#)

Rainfall Map 1



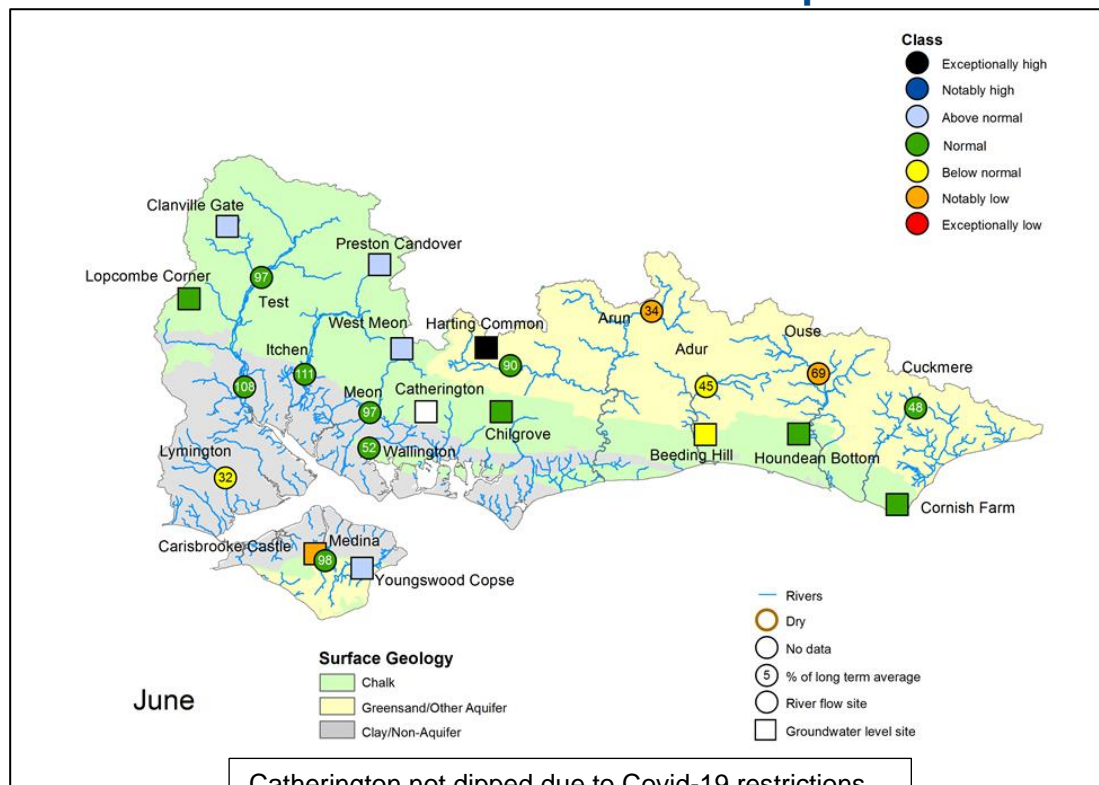
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material 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, 2020.

Rainfall Map 2

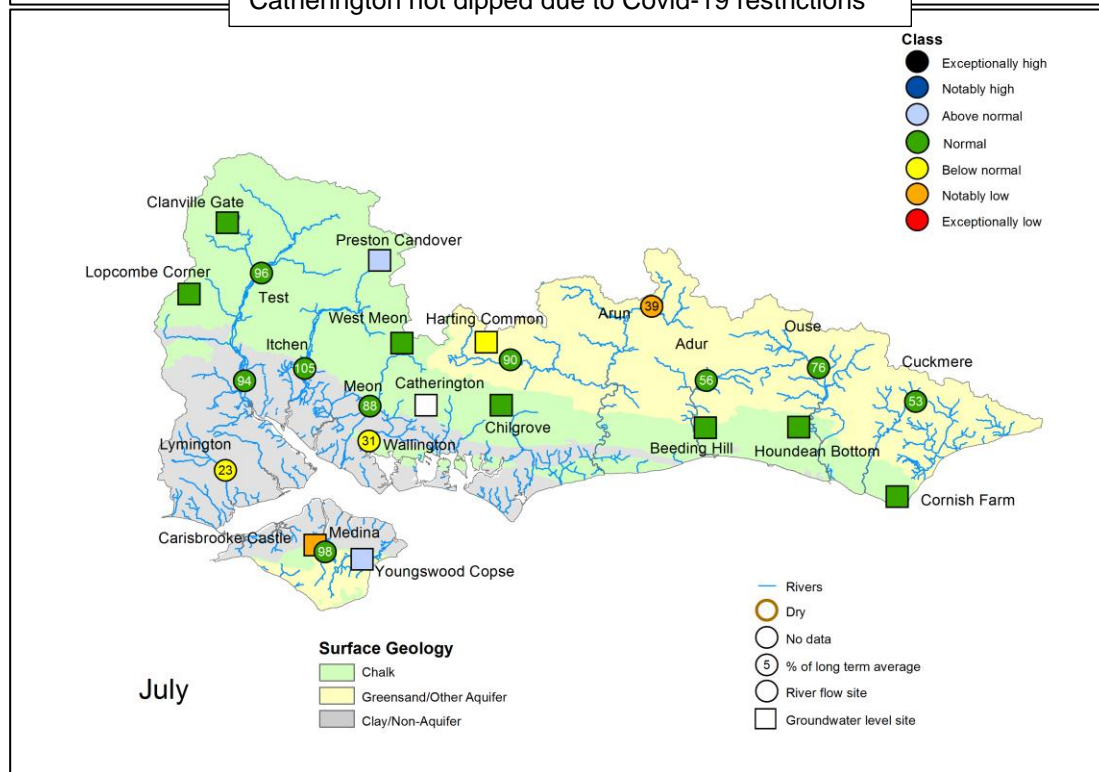


Total rainfall for hydrological areas across Solent and South Downs for the current month (up to 31 July), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Final NCIC (National Climate Information Centre) data based on the Met 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, 2020

River Flow and Groundwater Status Map



Catherington not dipped due to Covid-19 restrictions



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

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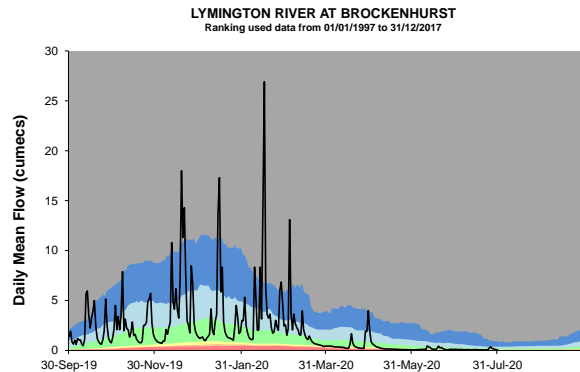
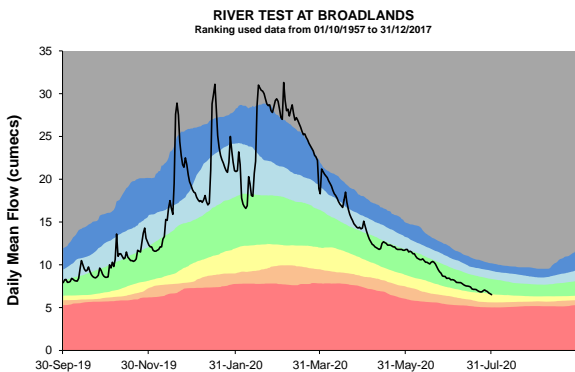
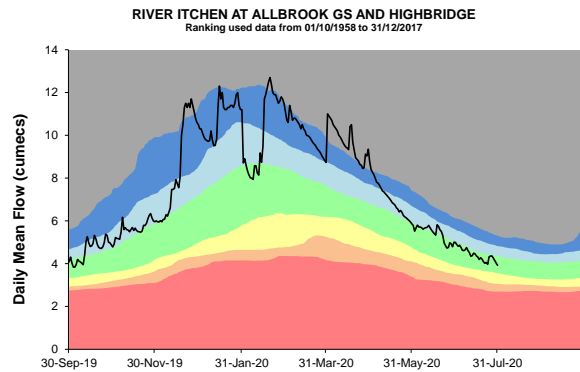
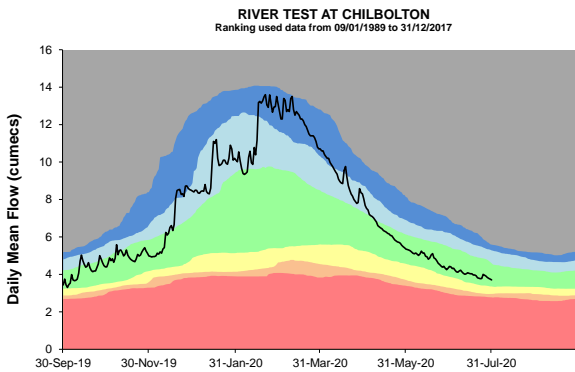
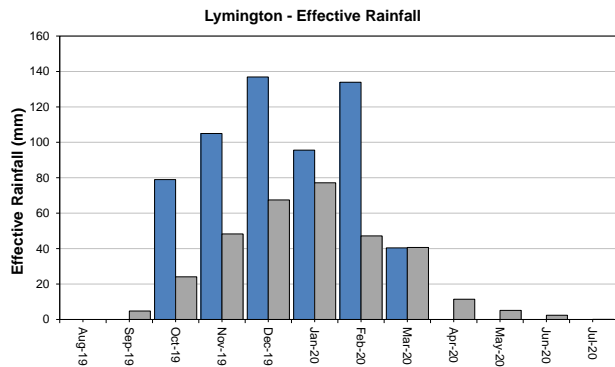
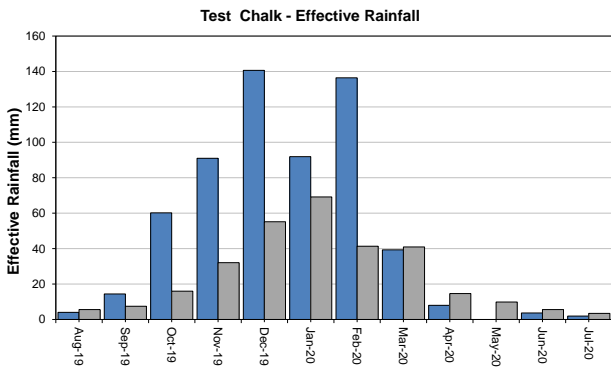
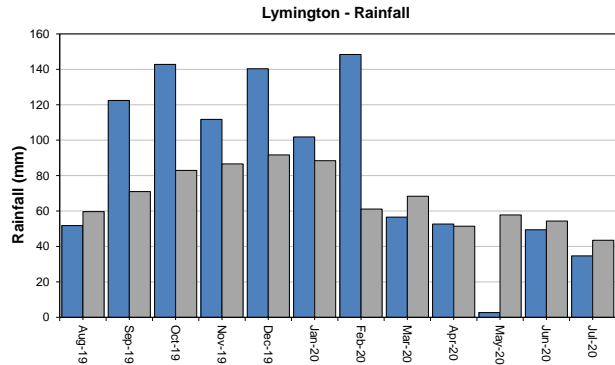
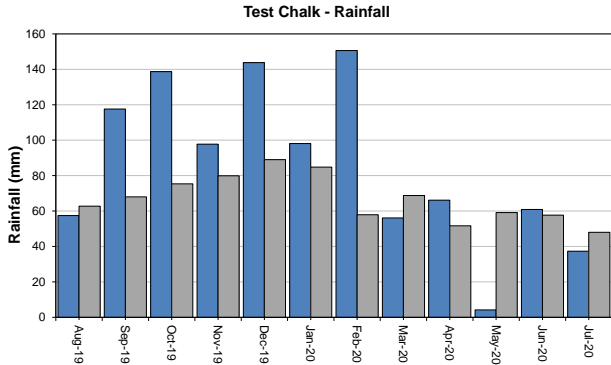
incident hotline
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West Hampshire – Page 1

Monthly total rainfall (mm)

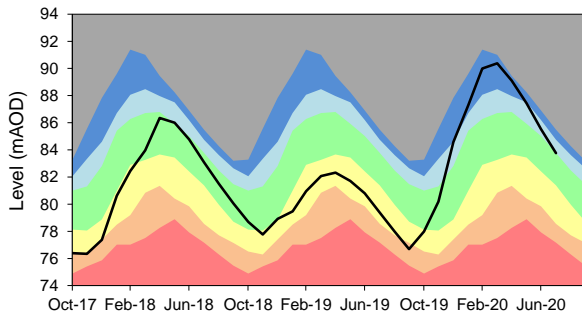
Long term average rainfall (mm)



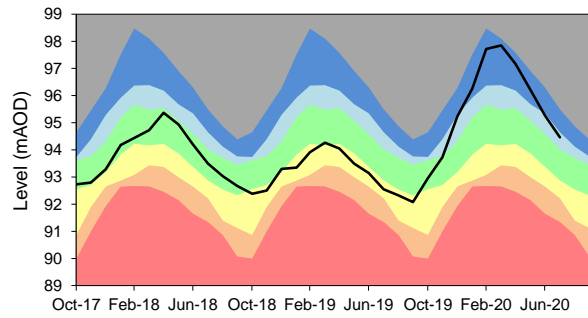
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

West Hampshire – Page 2

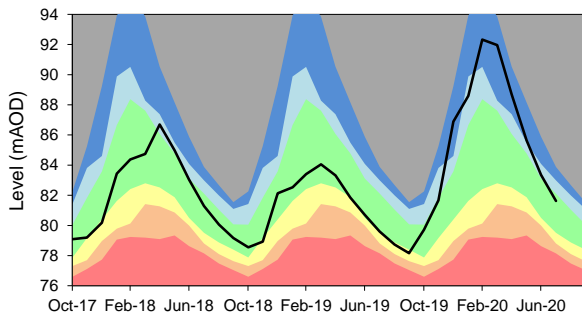
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2017



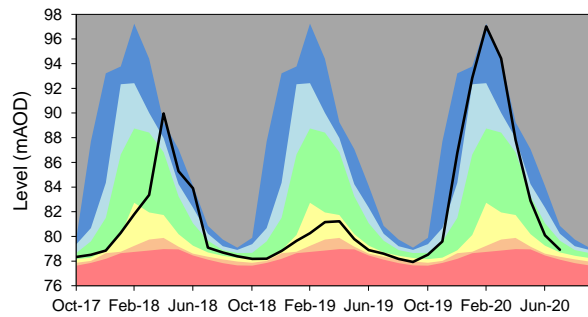
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2017



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



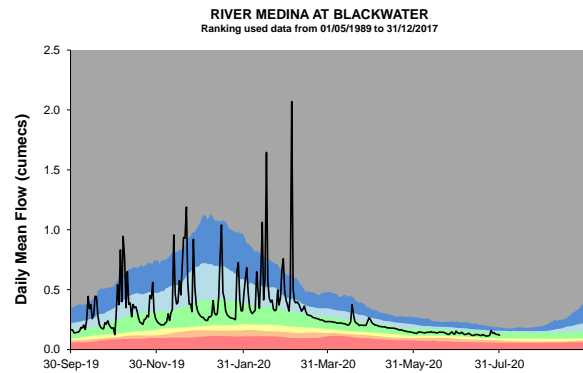
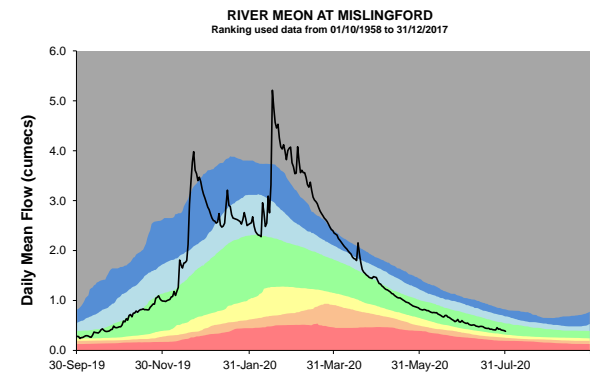
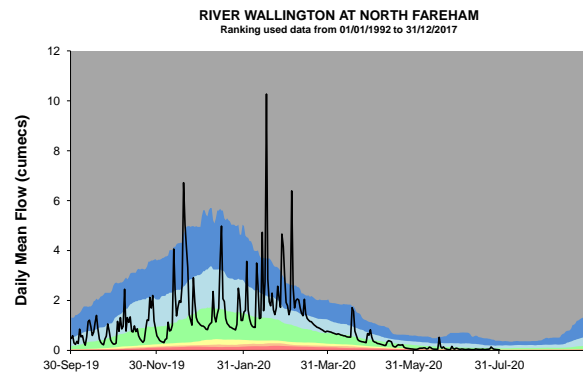
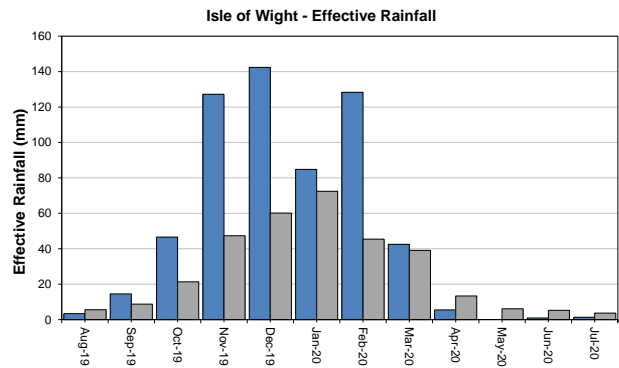
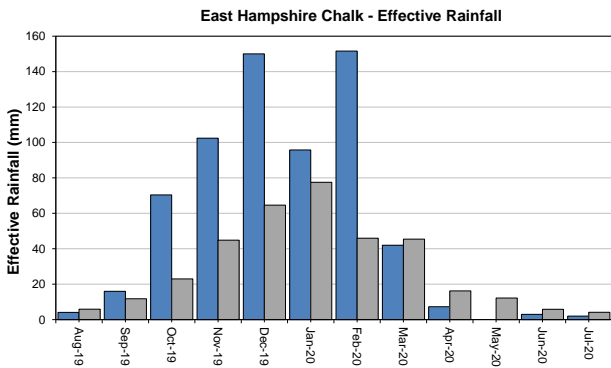
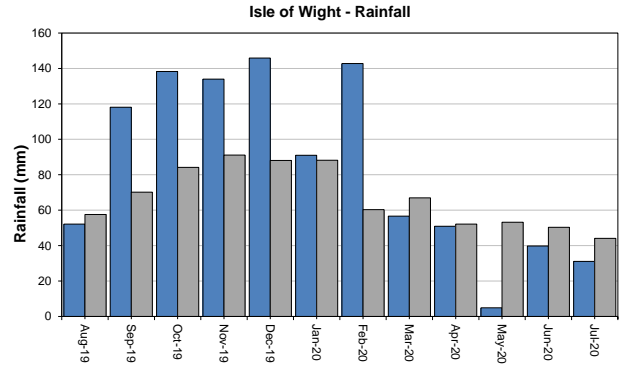
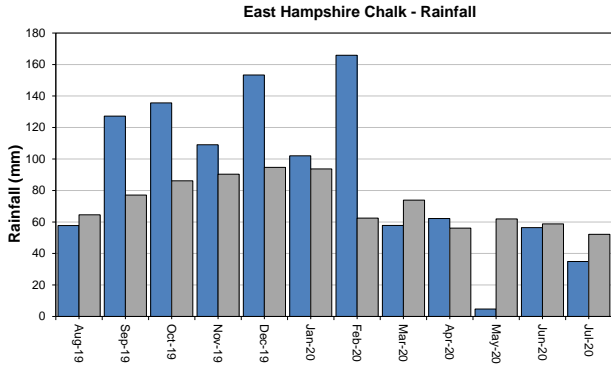
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2017



East Hampshire and Isle of Wight

Monthly total rainfall (mm)

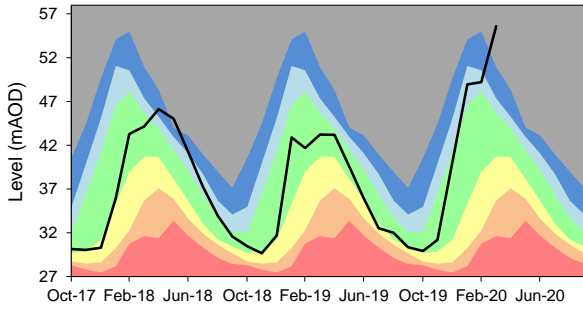
Long term average rainfall (mm)



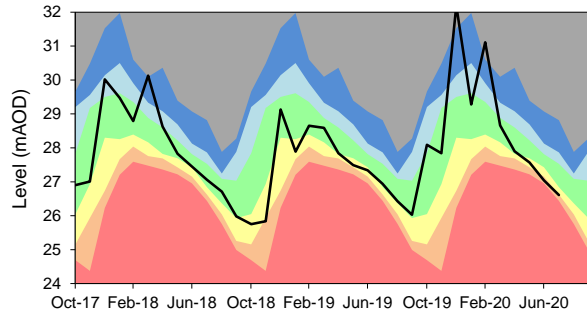
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

East Hampshire and Isle of Wight – Page 2

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

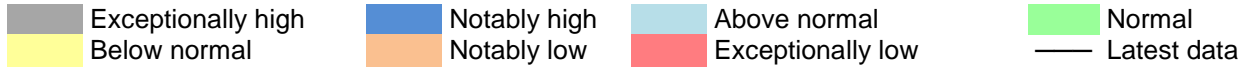
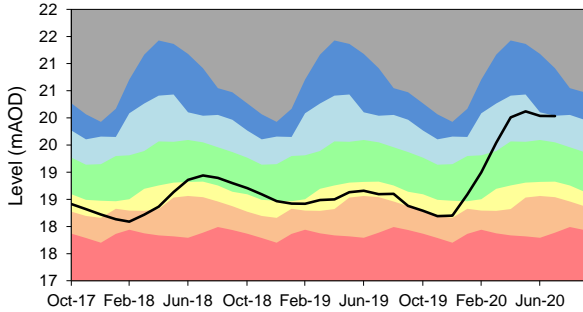


CARISBROOKE CASTLE GWL - CHALK
 Ranking derived from data for the period Aug-1977 to Dec-2017



Catherington not dipped due to Covid-19 restrictions

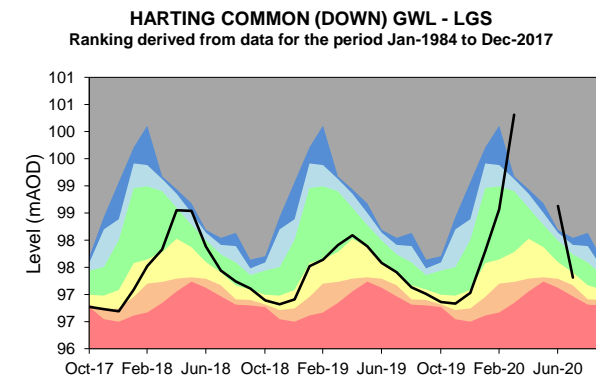
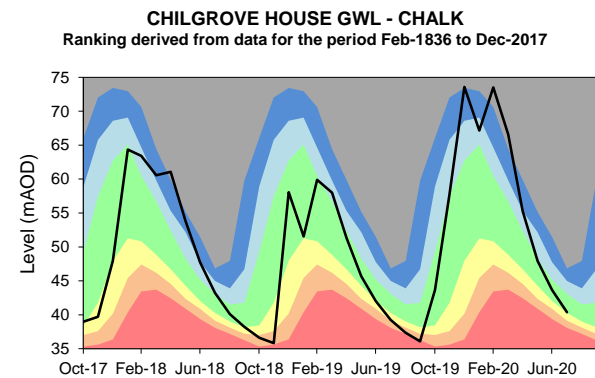
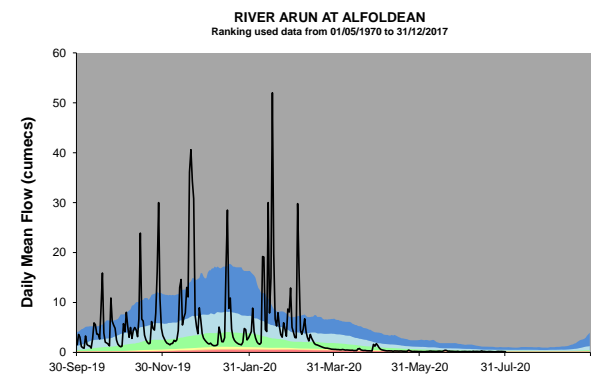
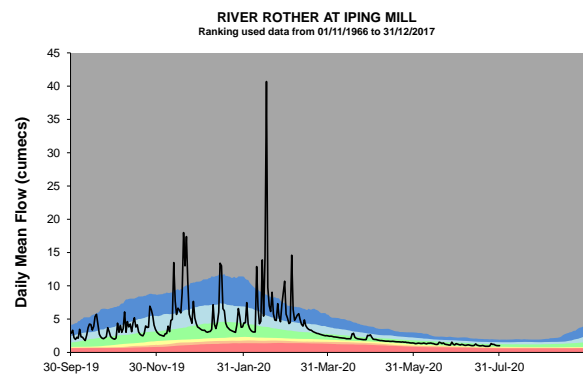
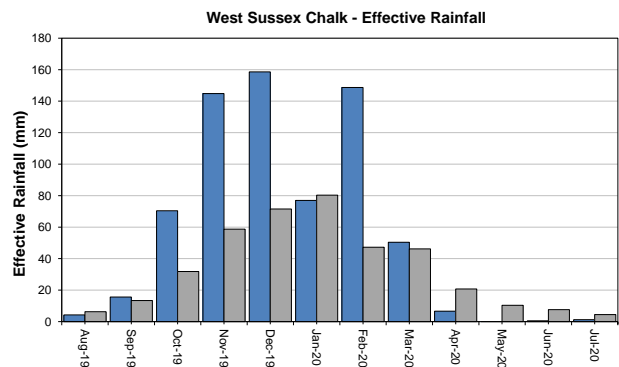
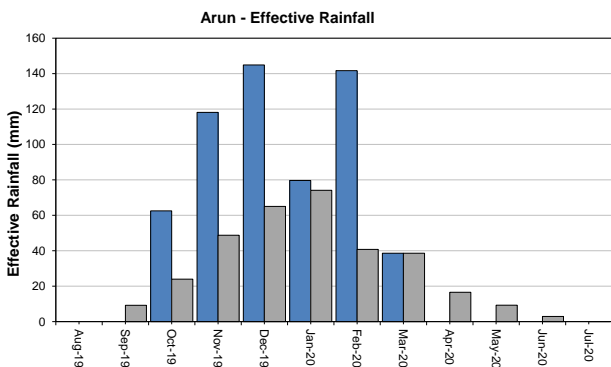
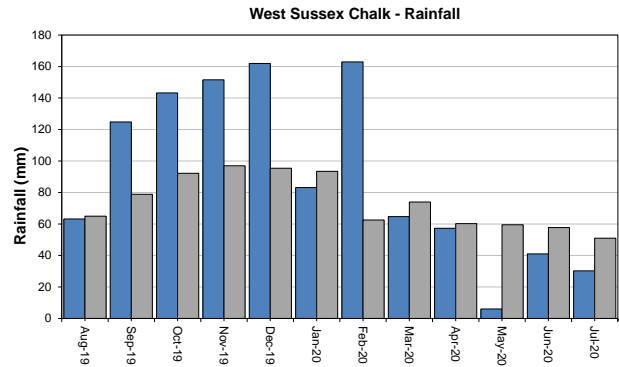
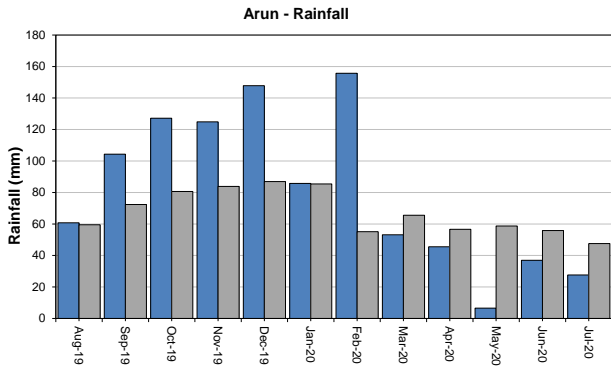
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2017



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

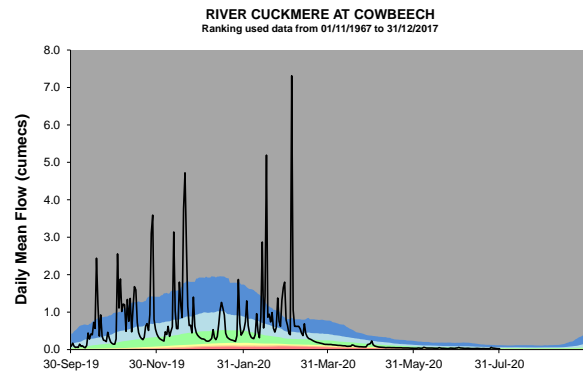
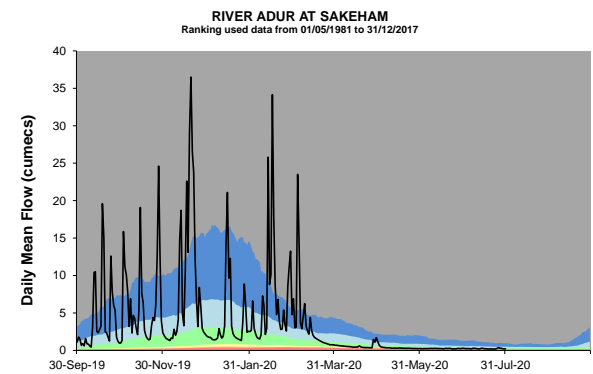
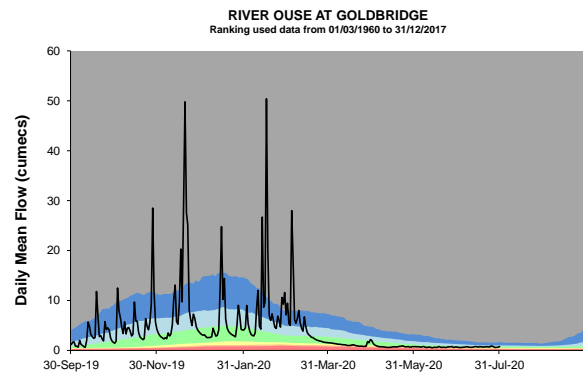
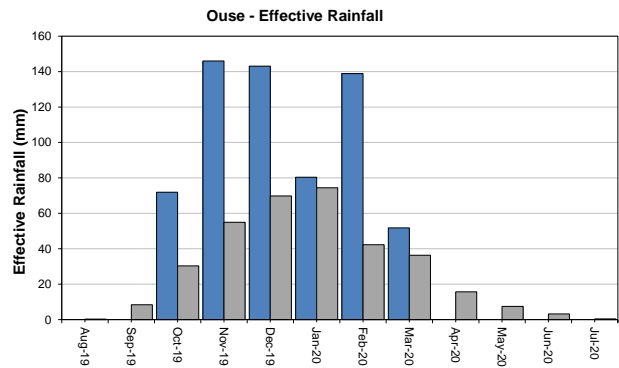
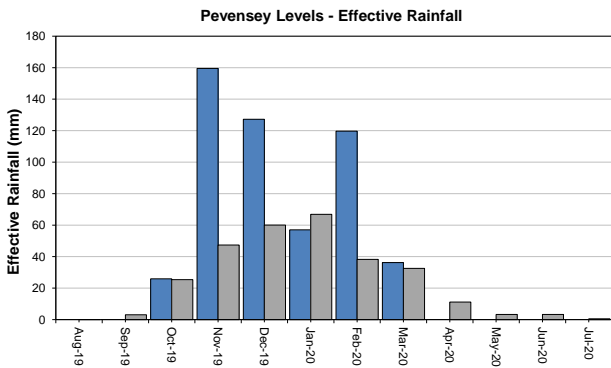
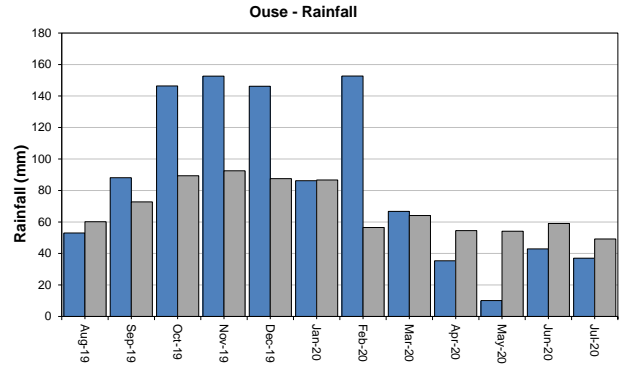
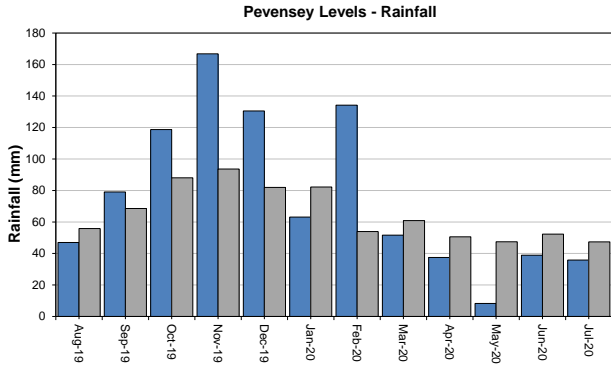
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East Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)



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

customer service line
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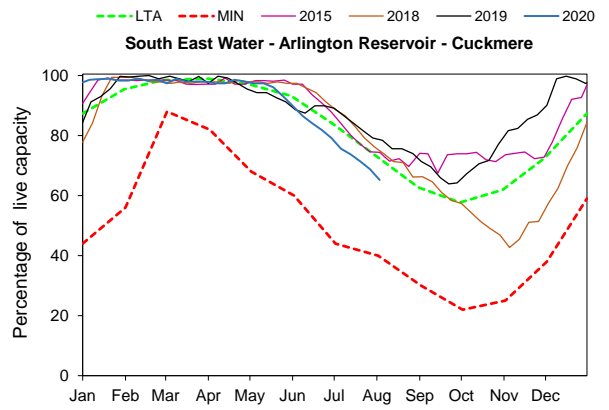
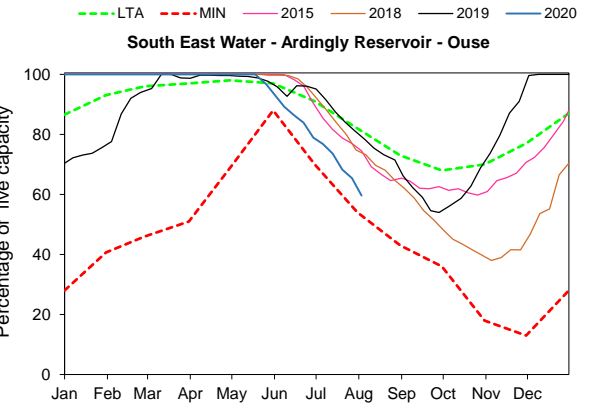
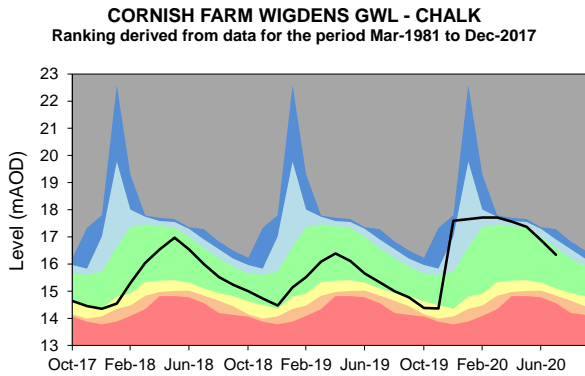
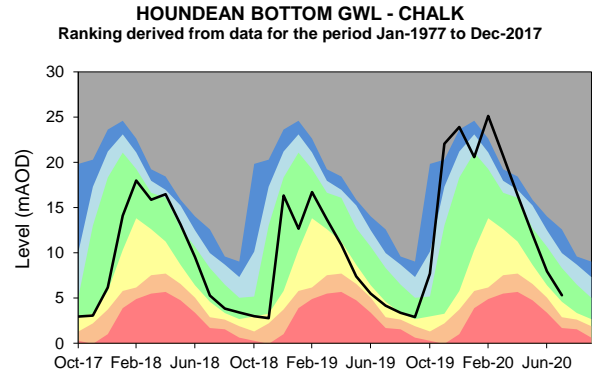
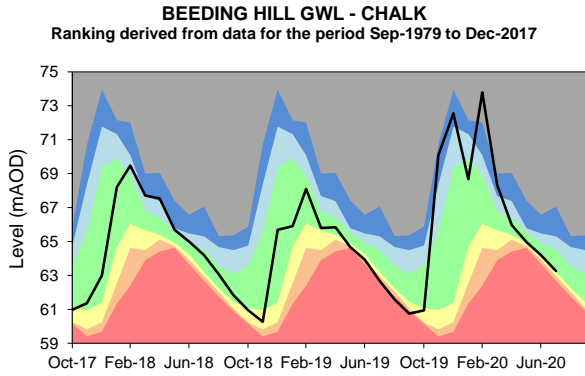
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East Sussex – Page 2

Monthly total rainfall (mm)

Long term average rainfall (mm)



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	37	48	78%	2	3	57%
East Hampshire Chalk	35	52	67%	2	4	47%
West Sussex Chalk	30	51	59%	1	4	28%
East Sussex Chalk	38	49	78%	2	4	45%
Isle of Wight	31	44	71%	1	4	36%
Western Rother Greensand	30	51	59%	1	4	29%
Hampshire Tertiaries	32	45	72%	0	0	0%
Lymington	35	44	80%	0	0	0%
Sussex Coast	23	42	54%	0	0	0%
Arun	28	48	58%	0	0	0%
Adur	30	46	64%	0	0	0%
Ouse	37	49	75%	0	0	0%
Cuckmere	37	49	76%	0	1	0%
Pevensey Levels	36	47	76%	0	1	0%
Solent and South Downs	33	47	69%	1	2	36%

Summer rainfall and effective rainfall

Summer totals for the period 1 April to the 31 July 2020

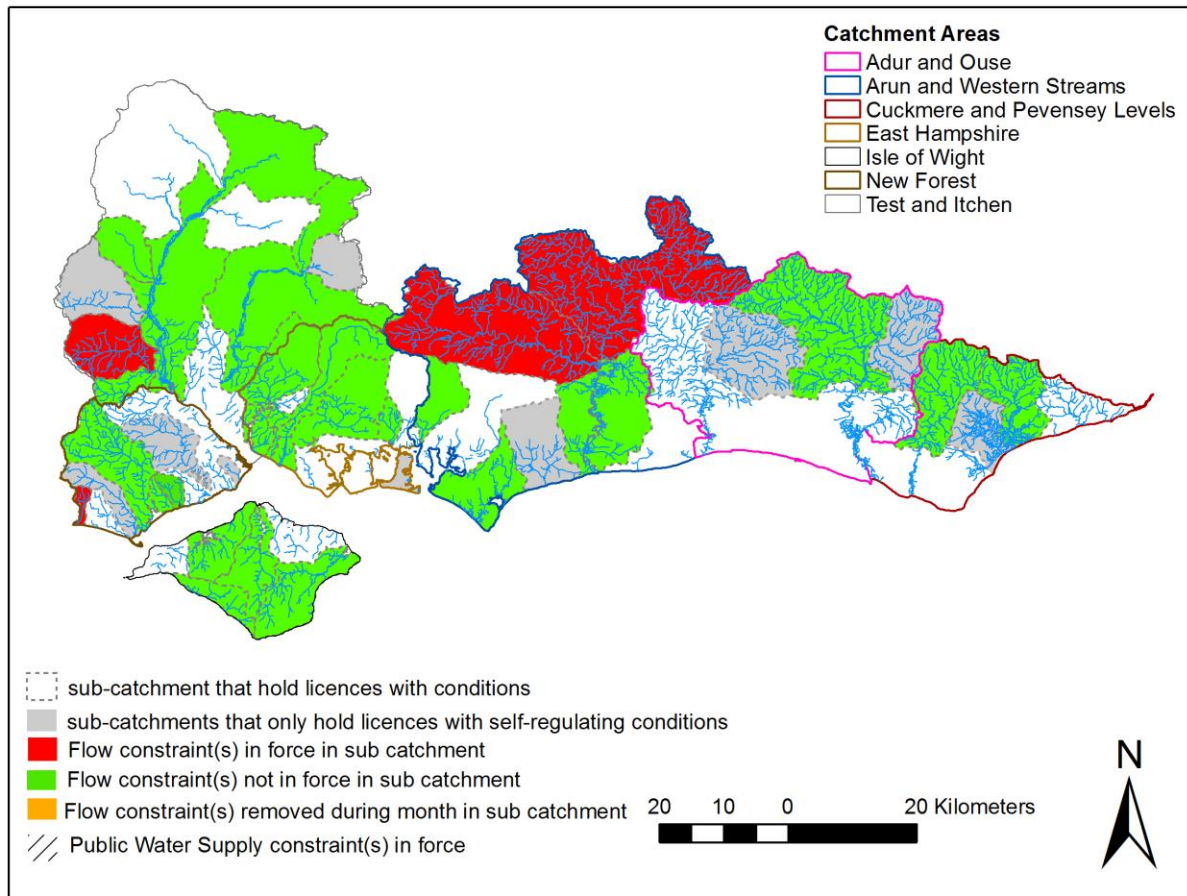
Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	156	216	72%	13	34	39%
East Hampshire Chalk	160	229	70%	13	38	33%
West Sussex Chalk	130	228	57%	8	43	19%
East Sussex Chalk	125	212	59%	7	35	21%
Isle of Wight	124	200	62%	7	28	26%
Western Rother Greensand	138	232	59%	10	52	18%
Hampshire Tertiaries	149	204	73%	0	16	0%
Lymington	142	207	68%	0	19	0%
Sussex Coast	112	190	59%	0	18	0%
Arun	112	219	51%	0	29	0%
Adur	110	214	52%	0	28	0%
Ouse	122	217	56%	0	27	0%
Cuckmere	130	208	63%	0	23	0%
Pevensey Levels	120	198	61%	0	18	0%
Solent and South Downs	131	212	61%	4	29	14%

Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	119	91
East Hampshire Chalk	122	87
West Sussex Chalk	128	92
East Sussex Chalk	132	94
Isle of Wight	132	99
Western Rother Greensand	125	83
Hampshire Tertiaries	123	93
Lymington	126	92
Sussex Coast	132	97
Arun	129	88
Adur	132	91
Ouse	125	85
Cuckmere	129	89
Pevensy Levels	132	92
Solent and South Downs	128	91

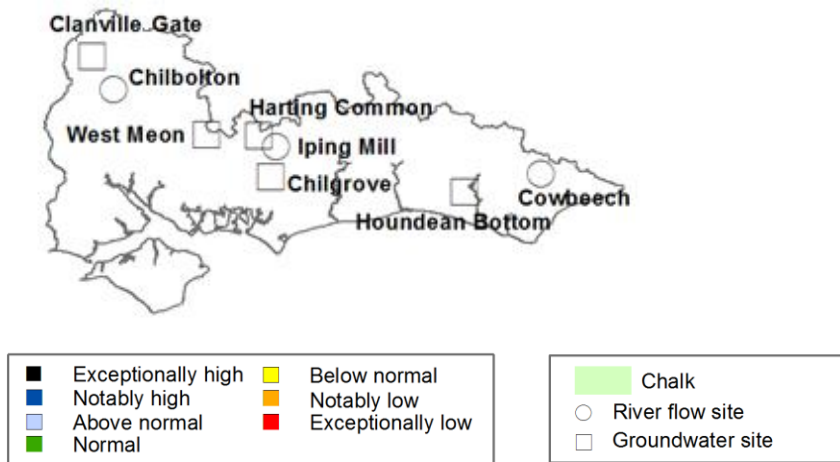
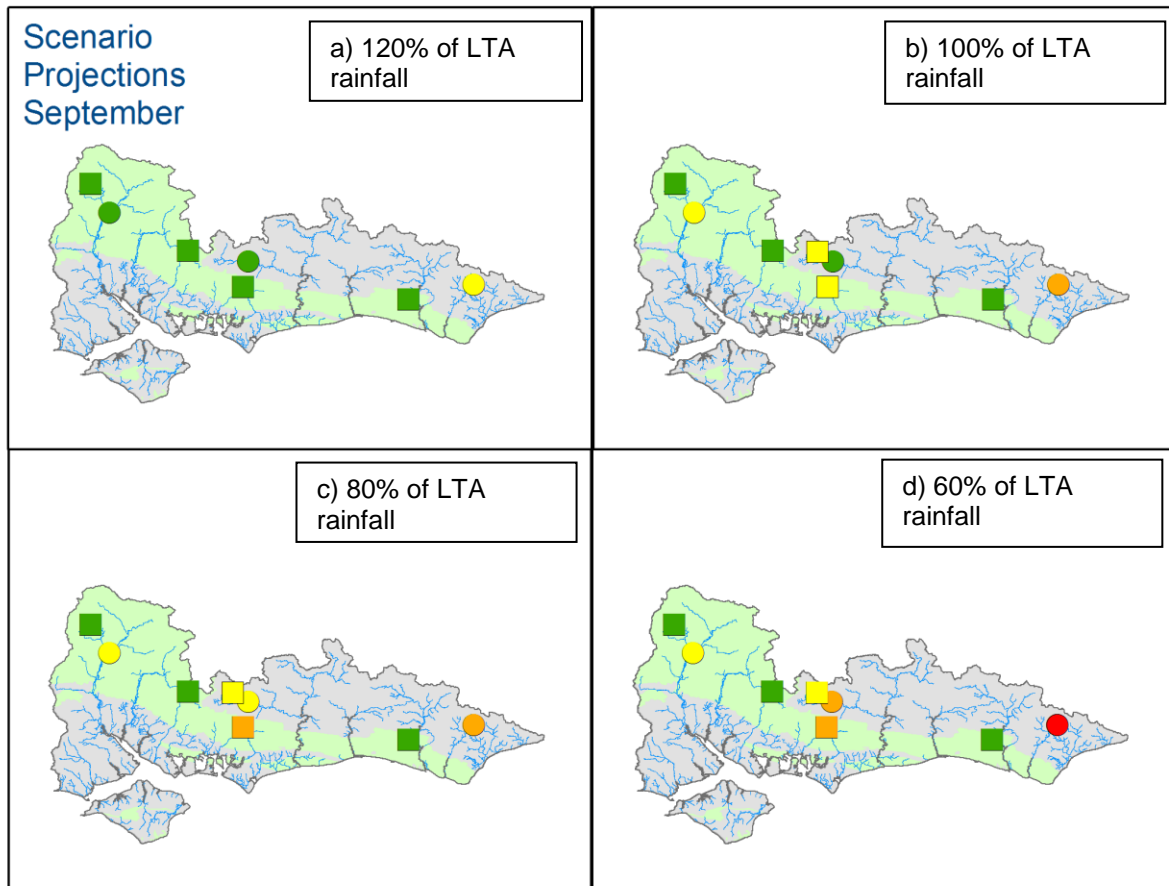
Environmental Impact

Flow Constraints



Catchment	No. licences with conditions currently operational in JULy	01-Jul	07-Jul	14-Jul	21-Jul	28-Jul	31-Jul
		START	WK1	WK2	WK3	WK4	END
		Number at Start of the month in force	No. licences with Flow Condition in Force in July	No. licences with Flow Condition in Force in July	No. licences with Flow Condition in Force in July	No. licences with Flow Condition in Force in July	Number at End of the month in force
A&O	3	0	0	0	0	0	0
A&W	37	0	0	5	7	4	4
C&P	6	0	0	0	0	0	0
EH	21	0	0	0	0	0	0
IOW	17	0	0	0	0	0	0
NF	16	0	0	4	4	4	4
T&I	24	0	0	0	1	1	1
Total in SSD	124	0	0	9	12	9	9

Forward look- river flow and groundwater September 2020



Projected river flows at key indicator sites up until the end of September 2020.
 Projected groundwater levels at key indicator sites at the end of September 2020.
 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 2020.

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