

Monthly water situation report

Summary – January 2021

Solent and South Downs (SSD) had average rainfall in January receiving 112% (96mm) of the LTA (86mm). Monthly mean river flows across SSD ranged from **normal** to **above normal**. Groundwater levels ranged from **normal** to **exceptionally high**. Soil moisture deficits across SSD ended the month at zero. End of month reservoir stocks were **above average** at both Ardingly Reservoir (Ouse Catchment) and at Arlington Reservoir (Cuckmere catchment).

Rainfall

Solent and South Downs (SSD) had **average** rainfall in January, receiving 112% (96mm) of the LTA (86mm). In terms of LTA, the Isle of Wight received the most rainfall (124% of LTA) and the Test Chalk areal unit received least rainfall (106% LTA). Generally, rainfall was evenly spread across the patch. The highest daily total rainfall (30.1mm) occurred on the Isle of Wight at Wroxall (Isle of Wight) on the 29th, whilst the second most daily rainfall was recorded at Princes Marsh (Western Rother Greensand) on the 25th. In addition to an even spatial distribution, there was also a fairly even spread of rainfall (relative to recent months) through the month, but it was wettest between the 25th and 29th. Despite a drier month overall, the total rainfall for the winter period (1st of December to the 31st of January) remains **above average** with 146% (508mm) of the LTA (348mm).

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs ended the month at zero and as a result soils were wetter than normal for the time of the year.

River Flows

Monthly mean river flows across SSD ranged narrowly from **normal** to **above normal**. The River Test at Broadlands, The Itchen at Allbrook & Highbridge, The Meon at Mislingford and the Cuckmere at Cowbeech all recorded mean monthly flows in the **above normal** range. The remaining eight reporting sites were in the **normal** range.

Groundwater Levels

End of month groundwater levels ranged from **normal** to **exceptionally high**. Carisbrooke (Isle of Wight) ended the month in the **exceptionally high** category with the highest January level since the start of the record in 1977. The groundwater level at Preston Candover (East Hampshire Chalk) was **notably high**, representing the 4th highest groundwater level on record. Clanville Gate (Test Chalk), Houndean Bottom (Ouse), Lopcombe Corner (Test Chalk) and West Meon (East Hampshire Chalk) recorded **above normal** groundwater levels. All remaining reporting sites recorded **normal** end of month levels.

Reservoir Storage/Water Resource Zone Stocks

End of month reservoir stocks were **above average** at Ardingly Reservoir (Ouse) with 100% of total capacity (LTA 93%) and at Arlington Reservoir (Cuckmere) with 98.6% of total capacity (LTA 95.4%).

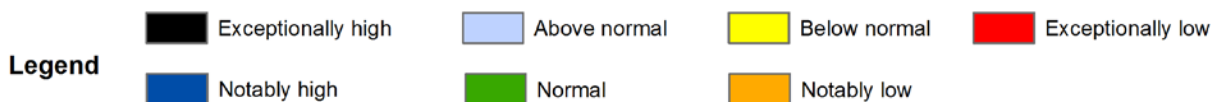
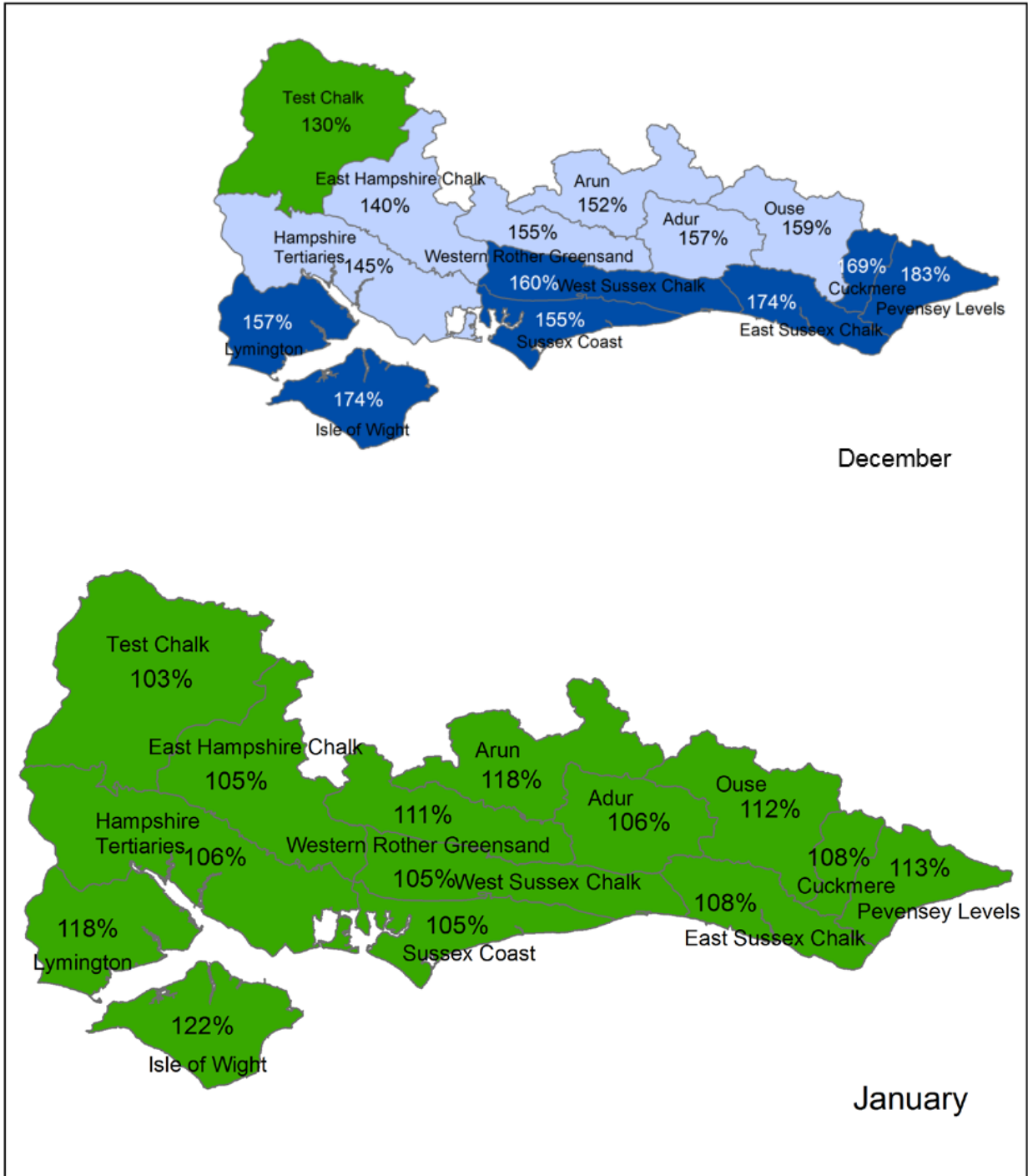
Environmental Impact

During January, only one licence had a restriction in force which was located in the New Forest. All were lifted by the end of the month. There were 18 fluvial flood alerts, one groundwater flood alert and 1 fluvial flood warning issued during January.

Author: [HydrologySSD](#)

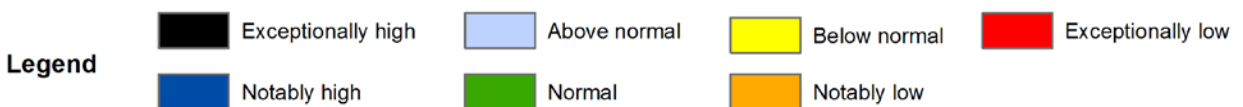
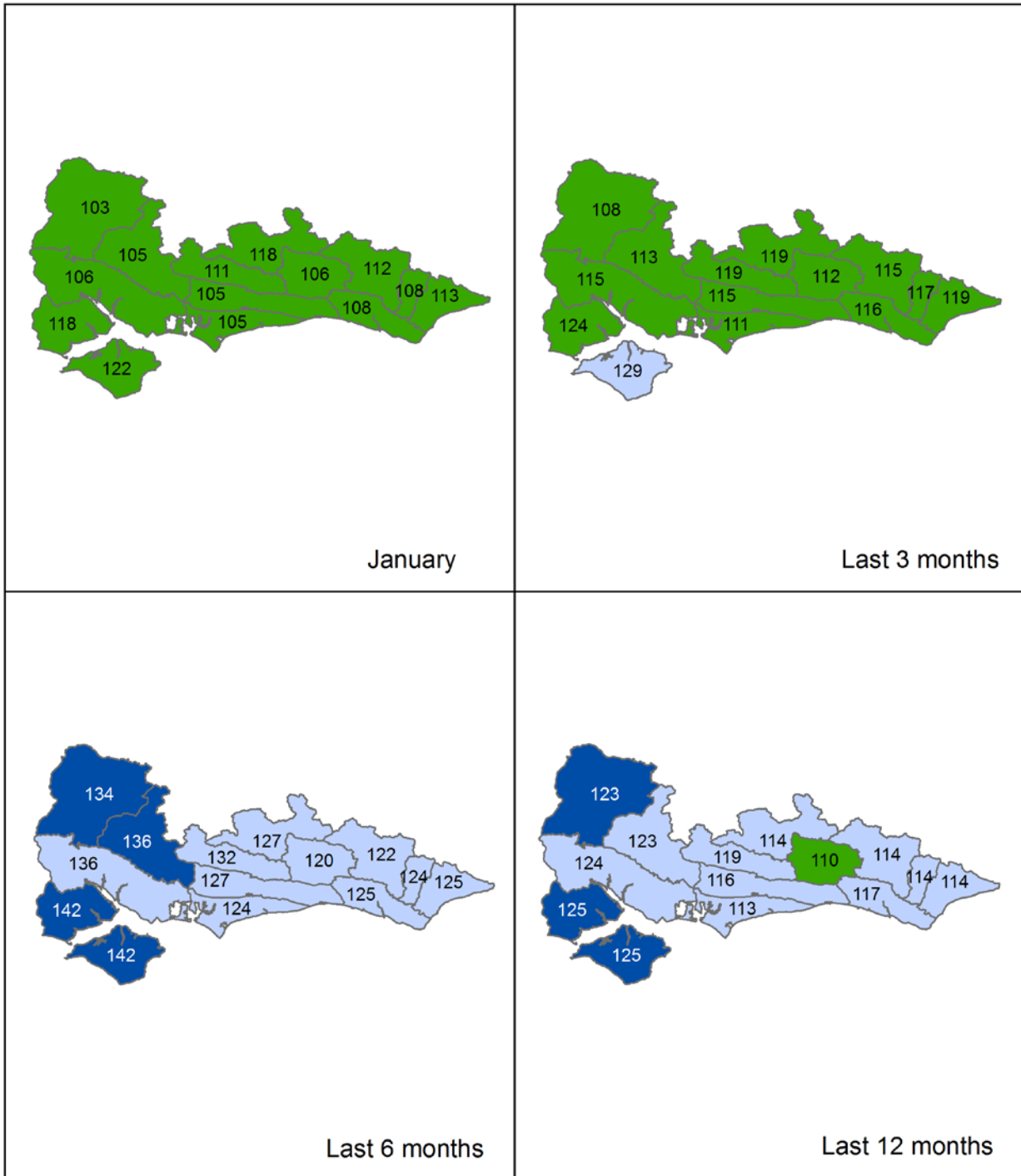


Rainfall Map 1



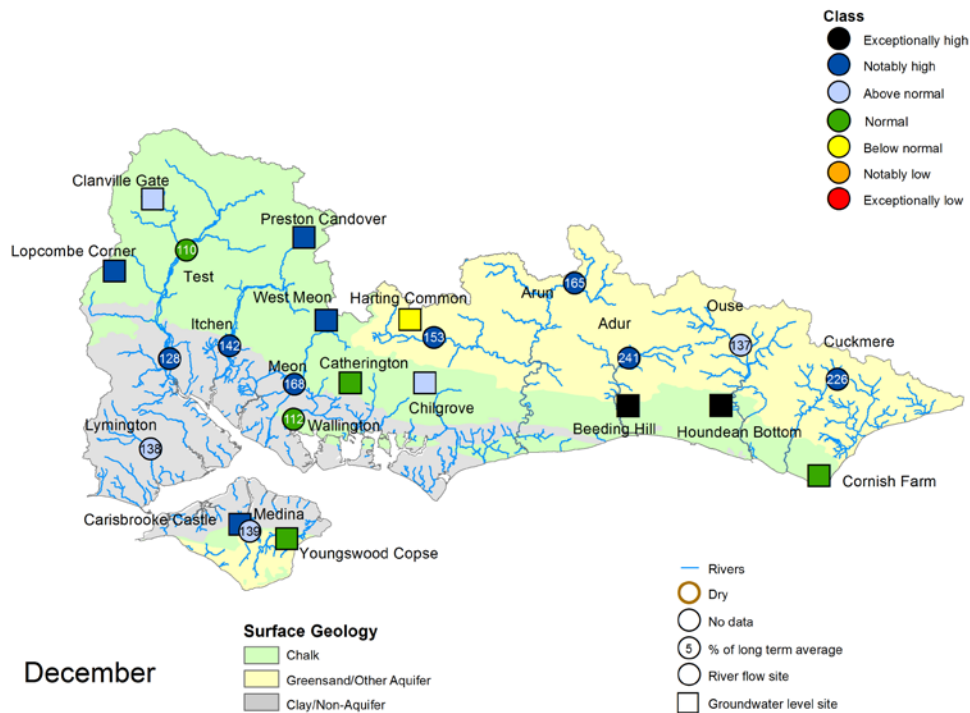
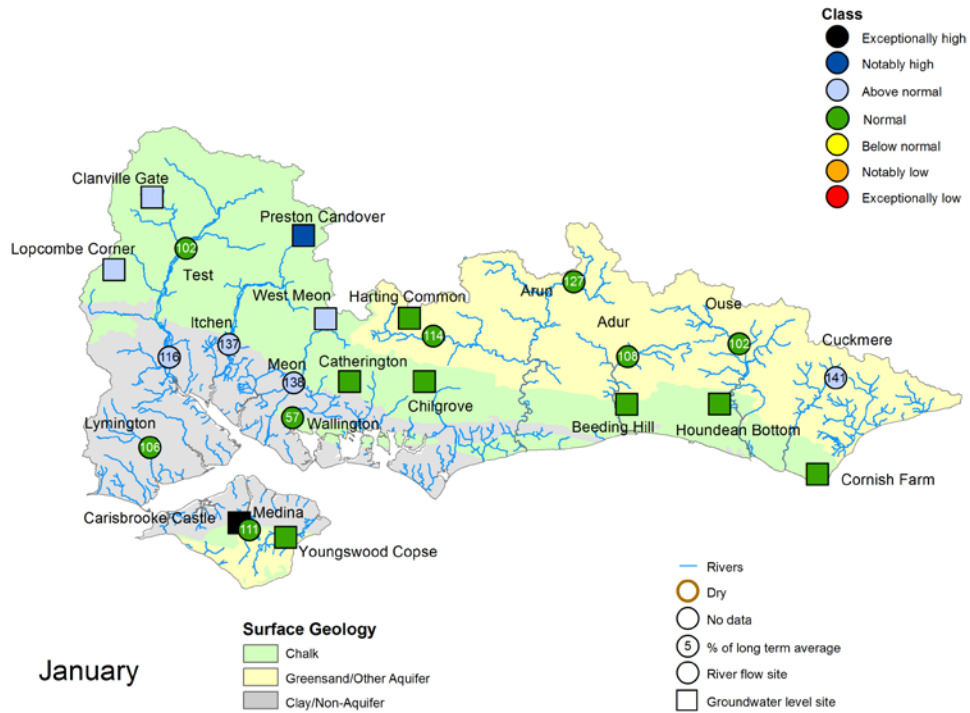
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material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

River Flow and Groundwater Status Map



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

Some features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology, © CEH. 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

Geological map reproduced with kind permission from UK Groundwater Forum, BGS © NERC

customer service line
03708 506 506

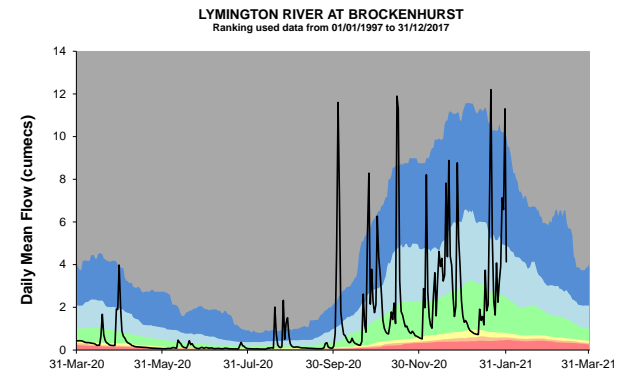
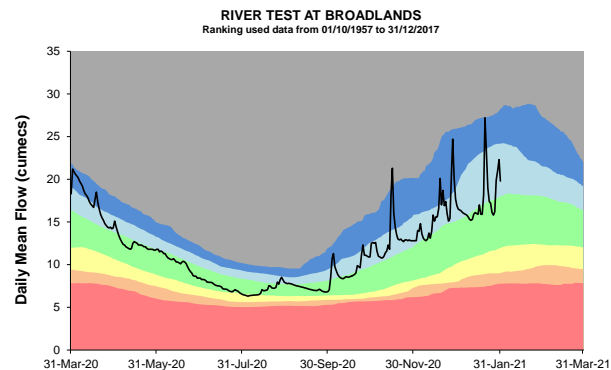
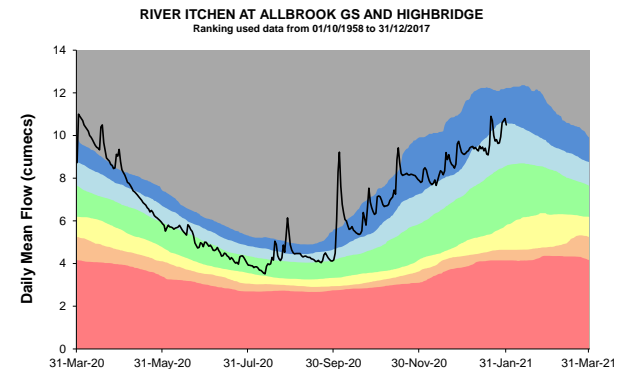
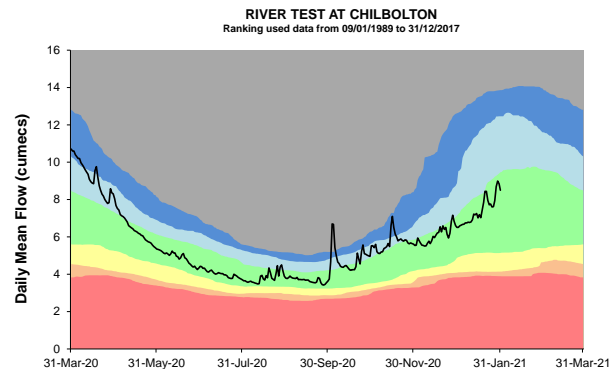
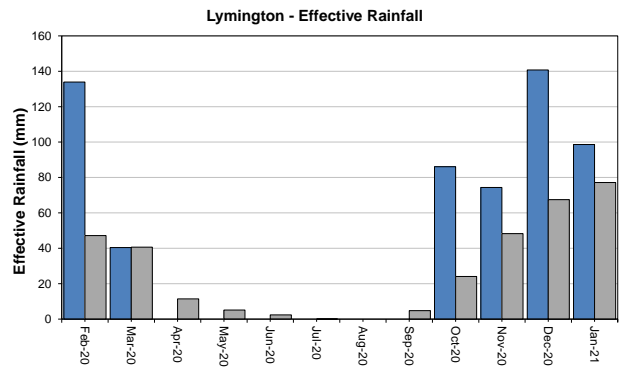
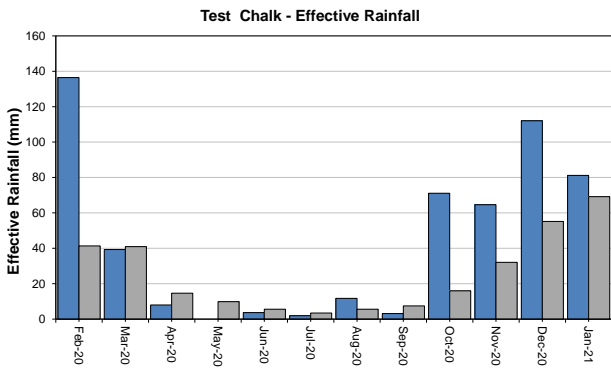
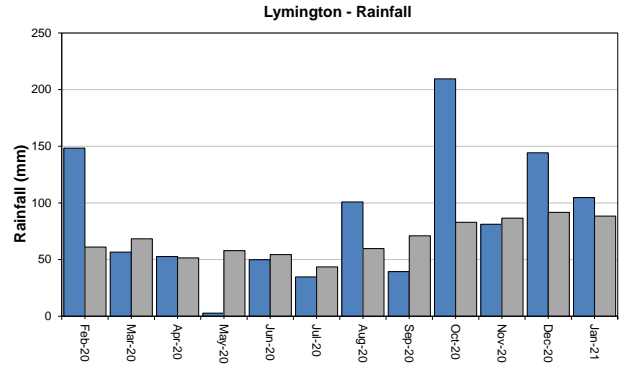
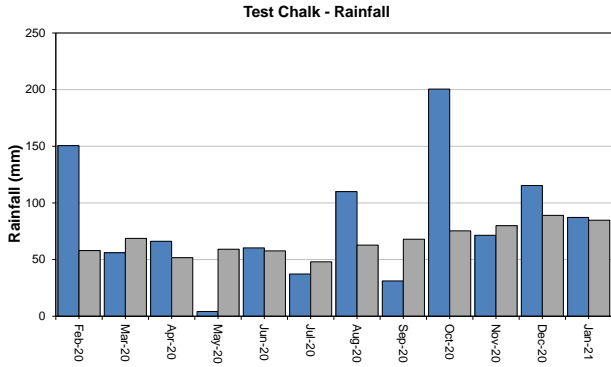
incident hotline
0800 80 70 60

floodline
0345 988 1188

West Hampshire – Page 1

Monthly total rainfall (mm)

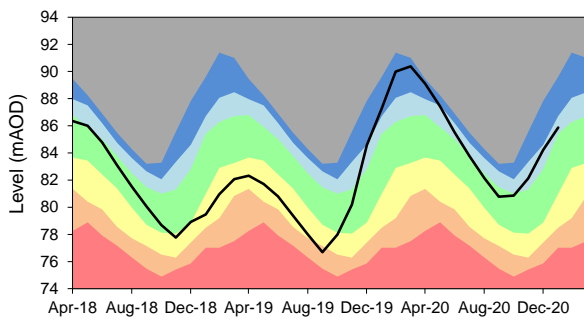
Long term average rainfall (mm)



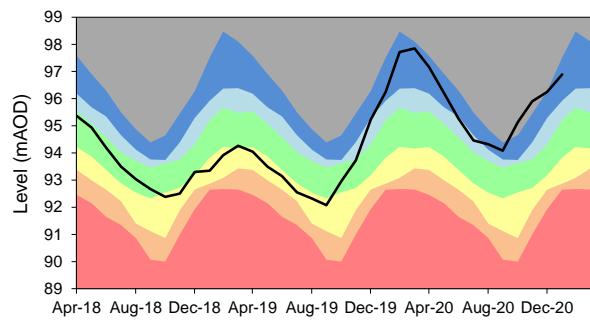
Exceptionally high
 Notably high
 Above normal
 Normal
 Below normal
 Notably low
 Exceptionally low
 — Latest data

West Hampshire – Page 2

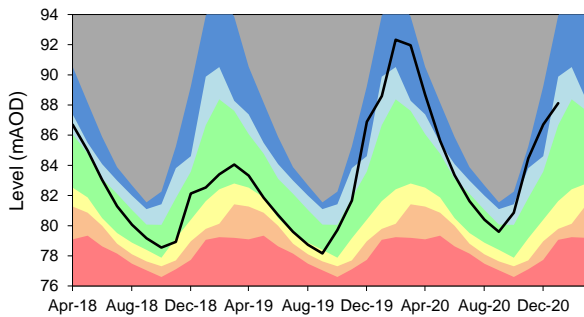
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2017



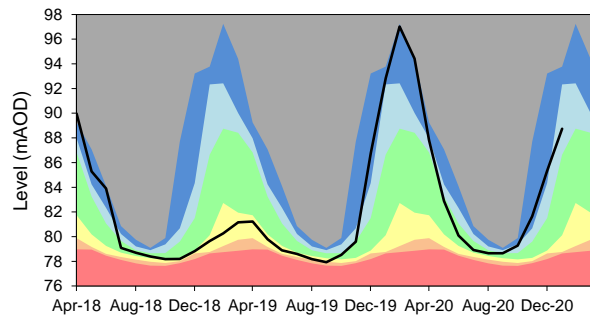
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2017



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



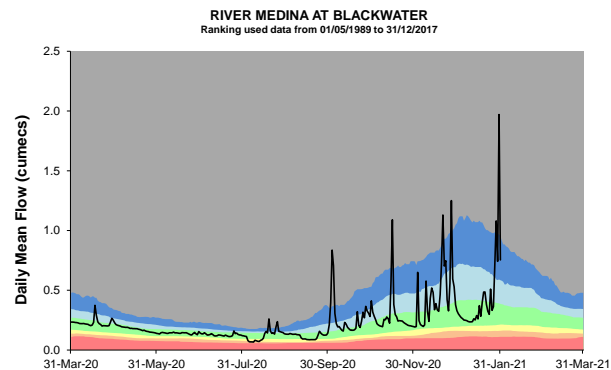
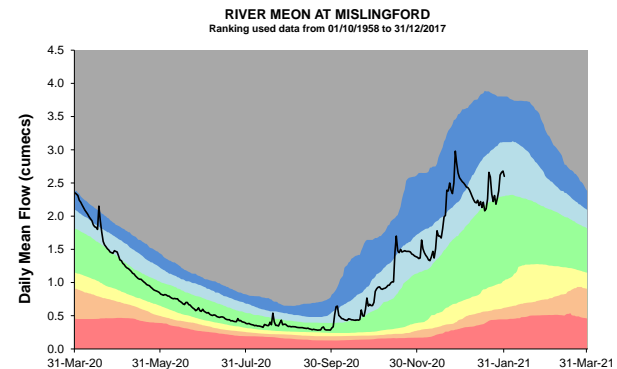
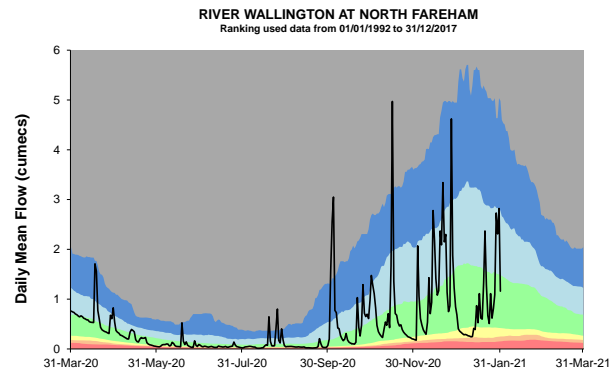
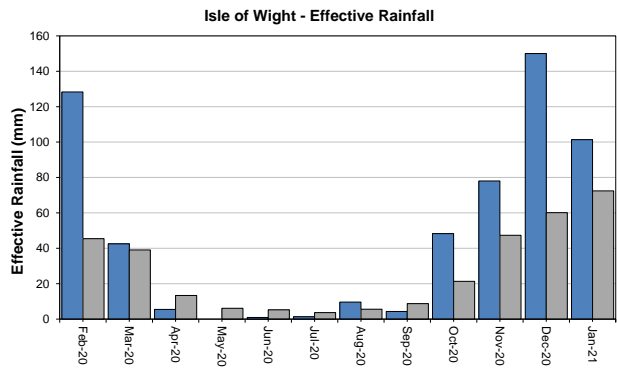
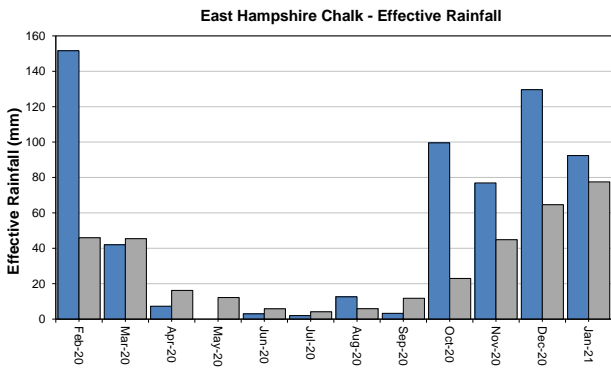
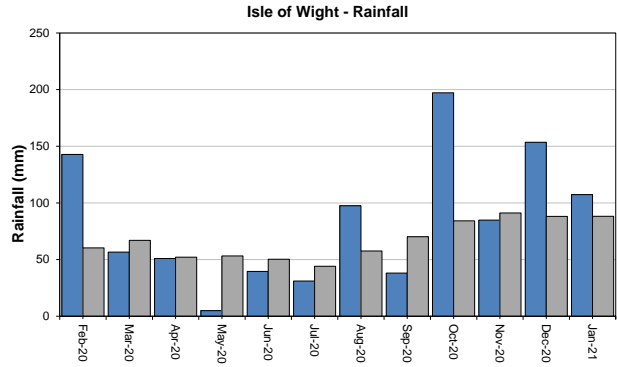
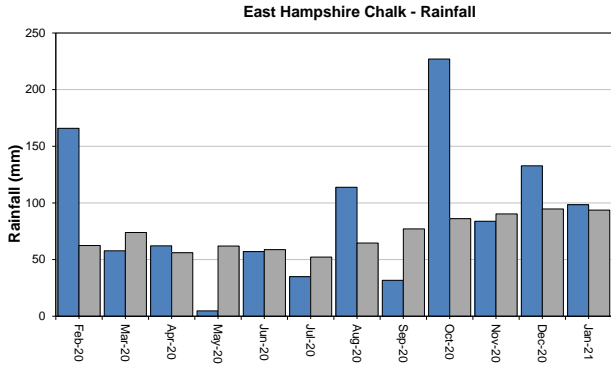
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2017



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

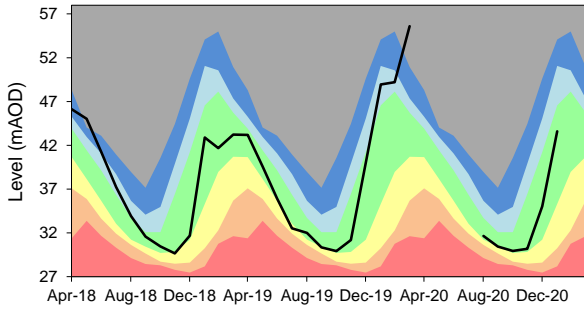
customer service line
03708 506 506

incident hotline
0800 80 70 60

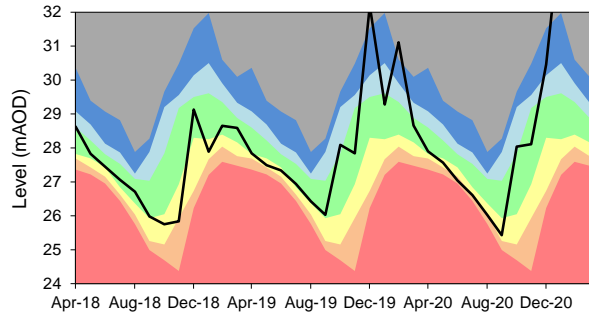
floodline
0345 988 1188

East Hampshire and Isle of Wight – Page 2

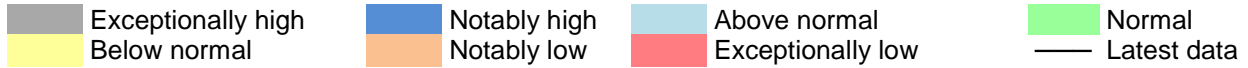
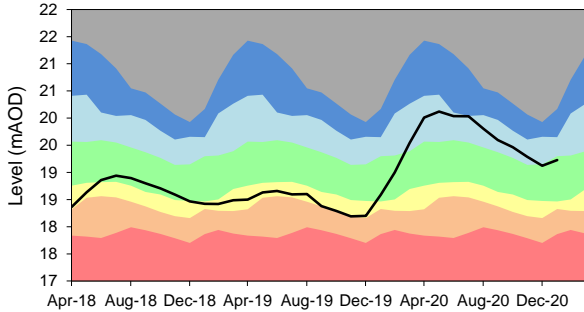
CATHERINGTON GWL - CHALK
 Ranking derived from data for the period Jan-1969 to Dec-2017



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



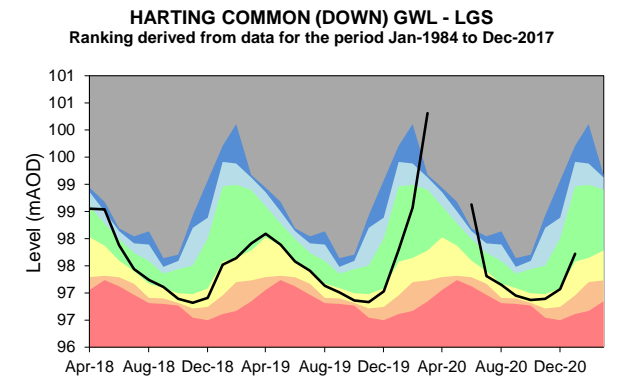
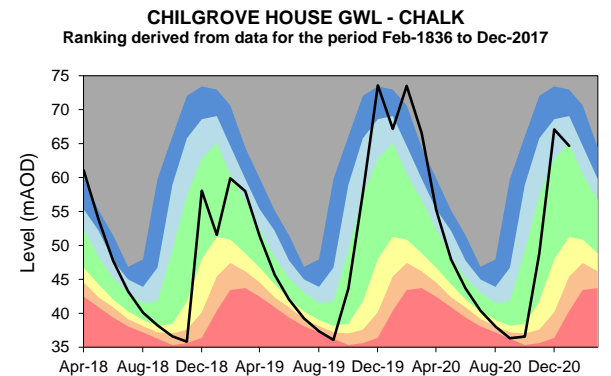
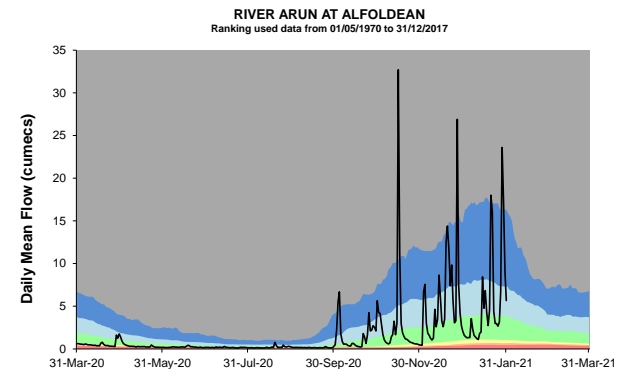
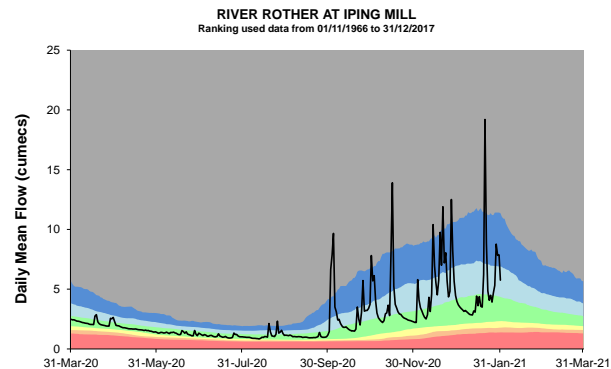
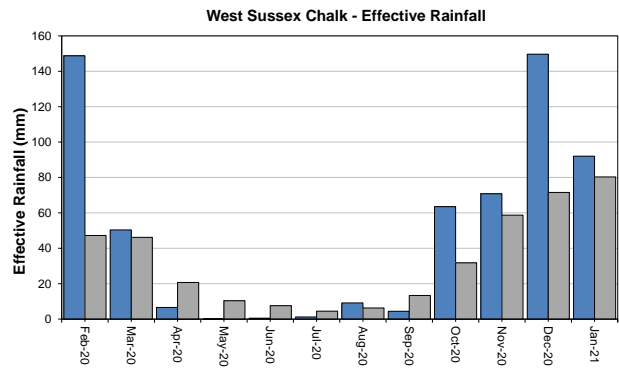
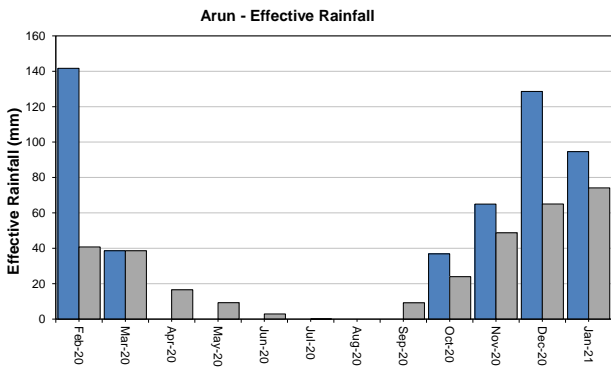
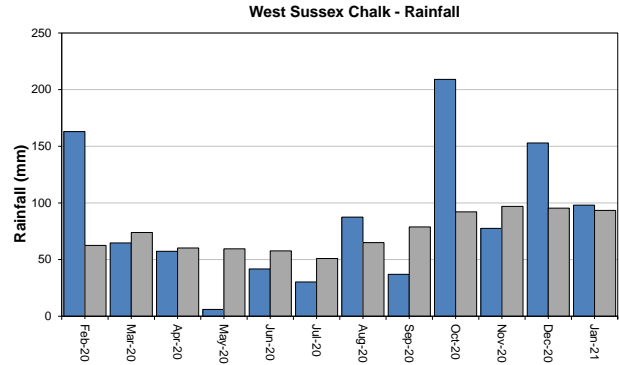
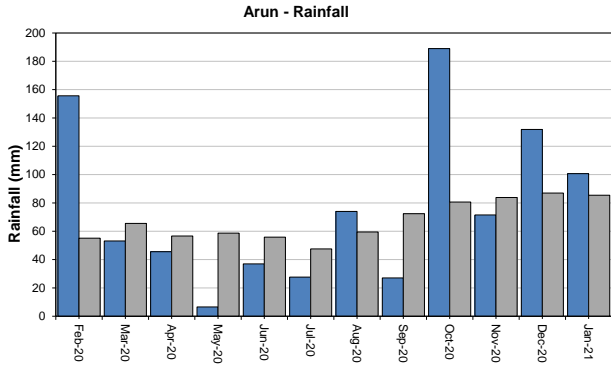
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2017



West Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)

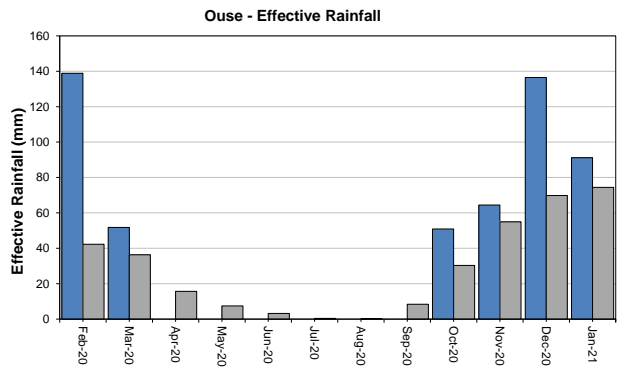
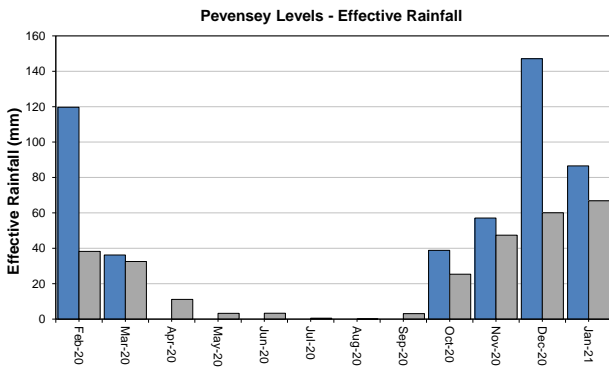
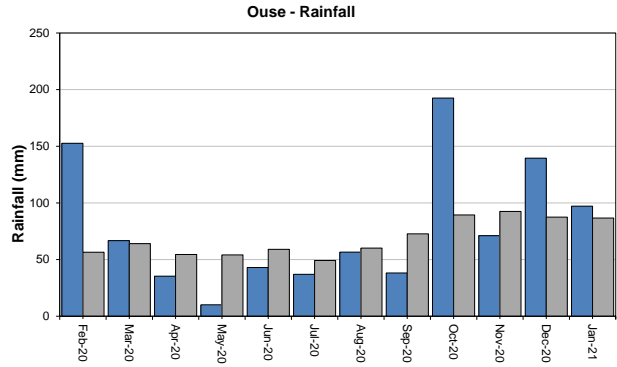
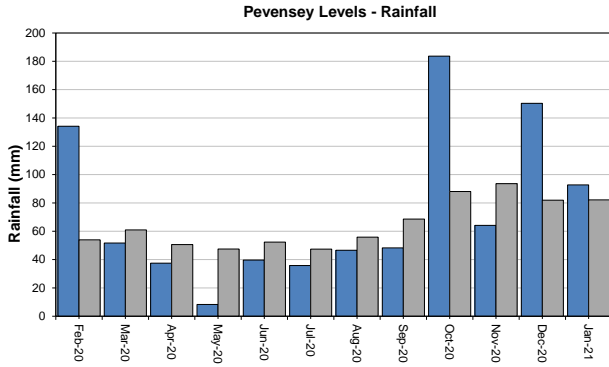


Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

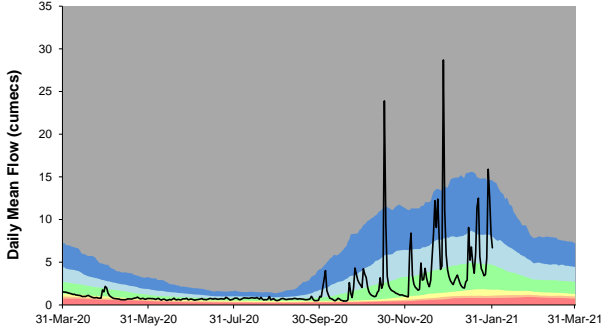
East Sussex

Monthly total rainfall (mm)

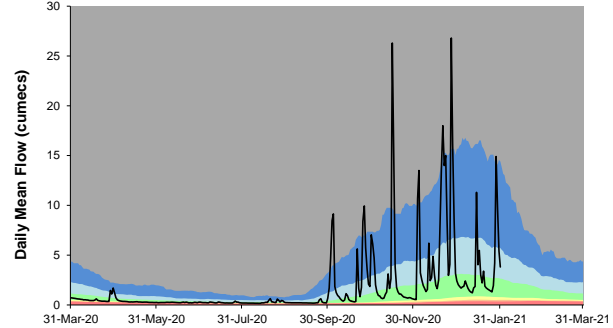
Long term average rainfall (mm)



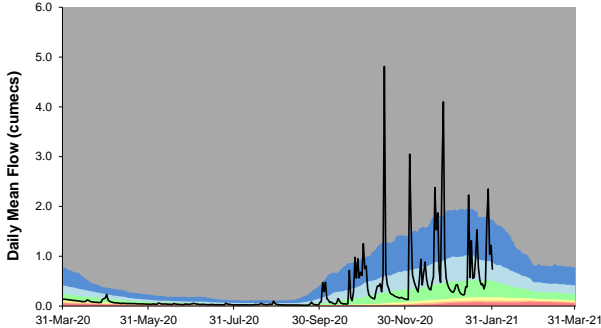
RIVER OUSE AT GOLDBRIDGE
Ranking used data from 01/03/1960 to 31/12/2017



RIVER ADUR AT SAKEHAM
Ranking used data from 01/05/1981 to 31/12/2017



RIVER CUCKMERE AT COWBEECH
Ranking used data from 01/11/1967 to 31/12/2017



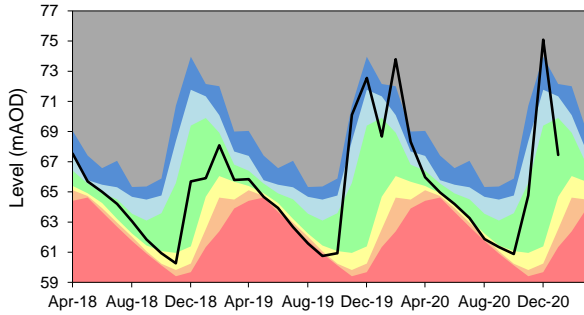
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

East Sussex – Page 2

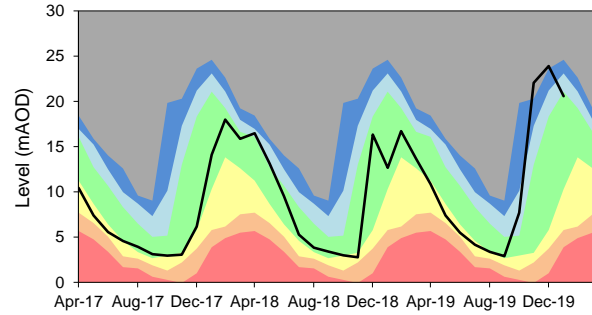
Monthly total rainfall (mm)

Long term average rainfall (mm)

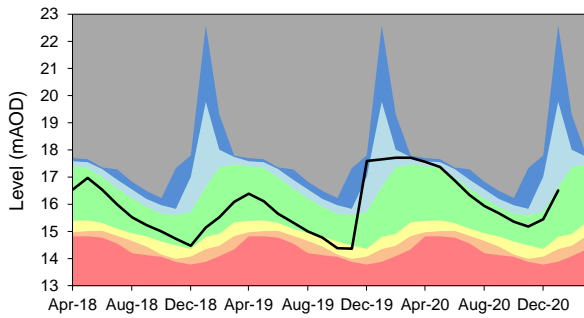
BEEADING HILL GWL - CHALK
Ranking derived from data for the period Sep-1979 to Dec-2017



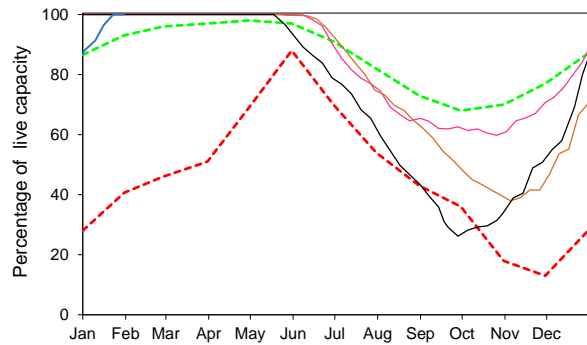
HOUNDEAN BOTTOM GWL - CHALK
Ranking derived from data for the period Jan-1977 to Dec-2017



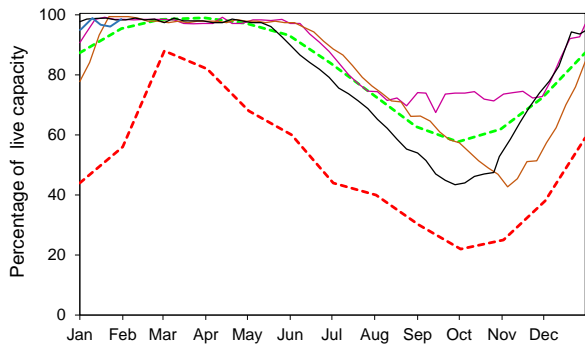
CORNISH FARM WIGDENS GWL - CHALK
Ranking derived from data for the period Mar-1981 to Dec-2017



--- LTA --- MIN --- 2015 --- 2018 --- 2020 --- 2021
South East Water - Ardingly Reservoir - Ouse



--- LTA --- MIN --- 2015 --- 2018 --- 2020 --- 2021
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	87	82	106	81	69	117
East Hampshire Chalk	98	90	110	92	78	119
West Sussex Chalk	98	92	107	92	80	115
East Sussex Chalk	95	85	111	88	71	125
Isle of Wight	107	87	124	101	72	140
Western Rother Greensand	110	98	112	104	86	121
Hampshire Tertiaries	91	85	108	85	73	117
Lymington	105	88	118	99	77	128
Sussex Coast	81	75	108	74	63	119
Arun	101	85	119	95	74	128
Adur	90	84	107	83	72	115
Ouse	97	85	114	91	74	123
Cuckmere	92	84	109	85	71	120
Pevensey Levels	93	80	116	87	67	129
Solent and South Downs	96	86	112	90	73	122

Winter rainfall and effective rainfall

Winter totals for the period 1 October to the 31st January 2021

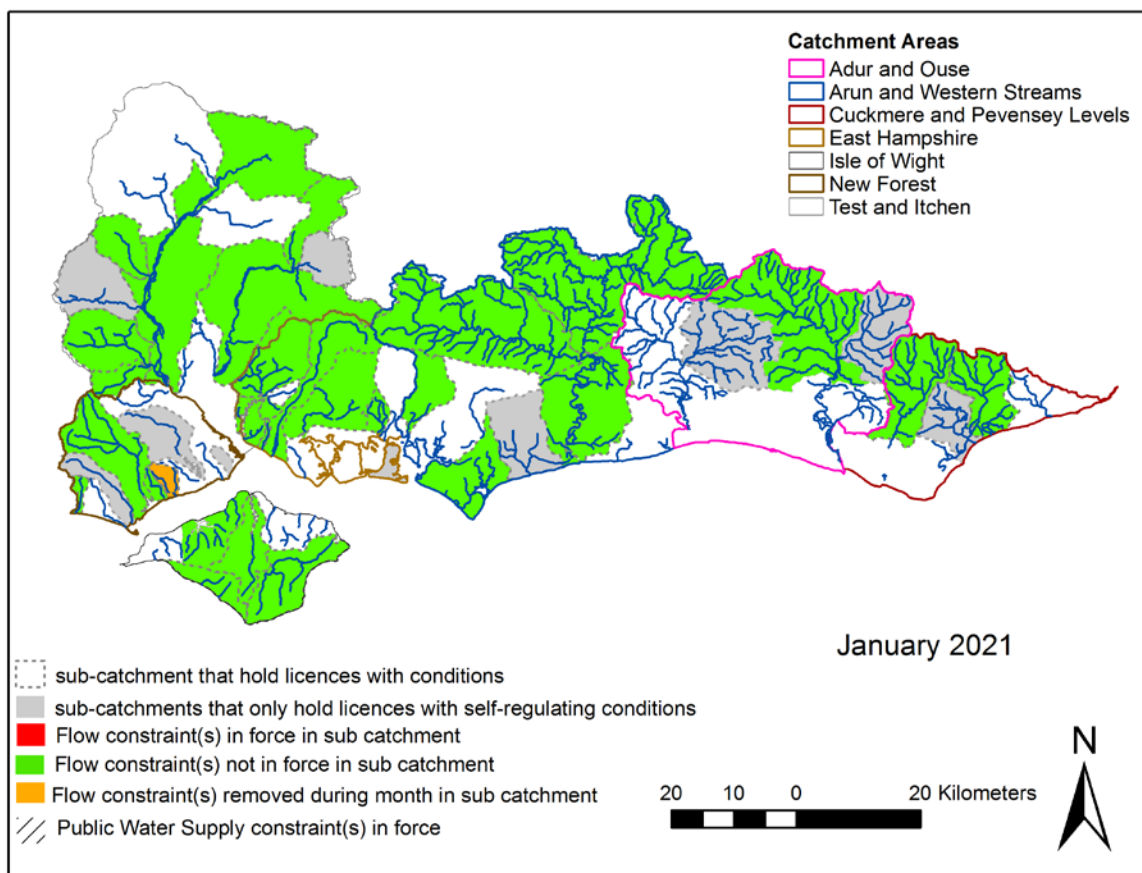
Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	475	322	147	329	172	191
East Hampshire Chalk	542	356	152	398	210	190
West Sussex Chalk	538	376	143	376	242	155
East Sussex Chalk	516	364	142	354	216	164
Isle of Wight	543	352	154	378	201	188
Western Rother Greensand	579	383	151	416	234	178
Hampshire Tertiaries	496	336	148	354	198	179
Lymington	540	351	154	400	217	184
Sussex Coast	425	310	137	258	167	155
Arun	493	337	146	325	212	153
Adur	478	342	140	310	211	147
Ouse	500	353	142	343	229	150
Cuckmere	502	354	142	344	217	158
Pevensey Levels	491	343	143	330	200	165
Solent and South Downs	508	348	146	351	209	168

Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	0	2
East Hampshire Chalk	0	1
West Sussex Chalk	0	1
East Sussex Chalk	0	2
Isle of Wight	0	1
Western Rother Greensand	0	1
Hampshire Tertiaries	0	1
Lymington	0	1
Sussex Coast	0	2
Arun	0	1
Adur	0	1
Ouse	0	1
Cuckmere	0	1
Pevensey Levels	0	1
Solent and South Downs	0	1

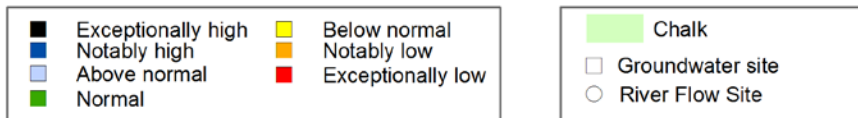
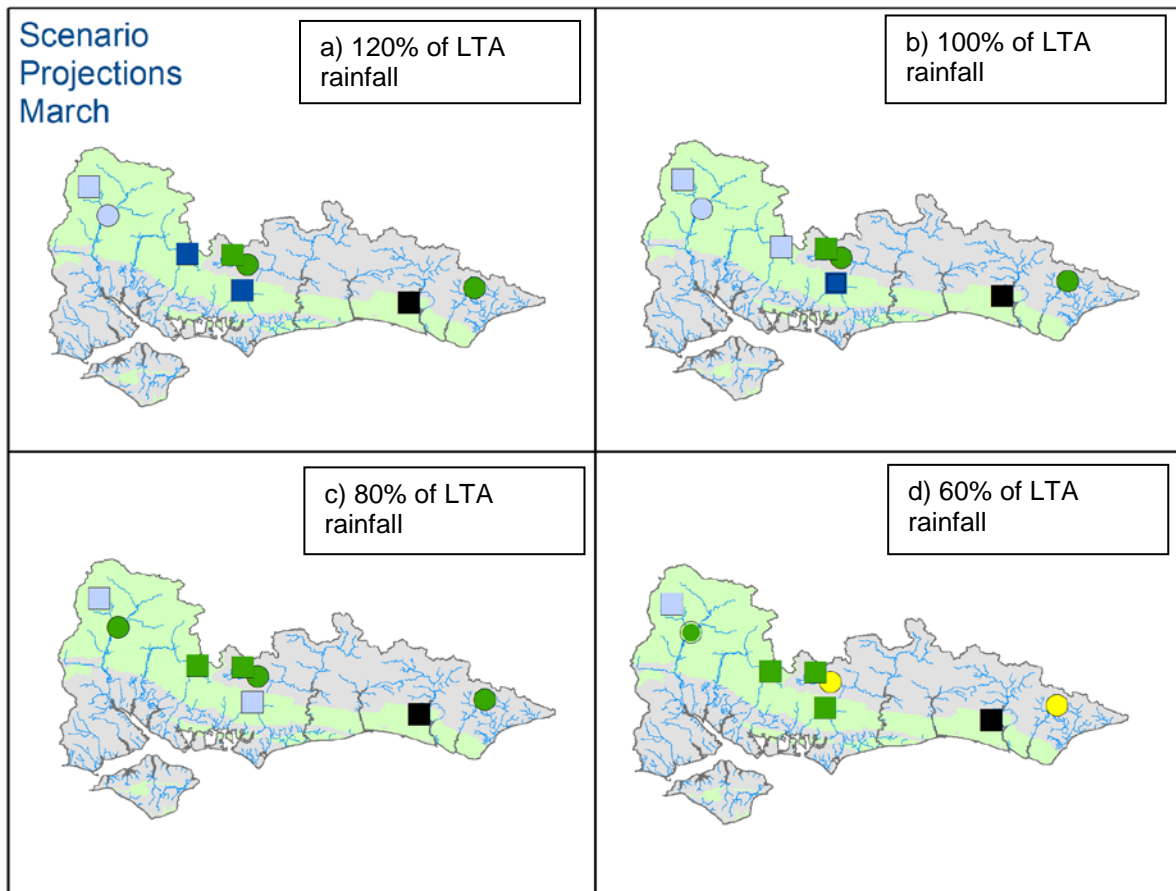
Environmental Impact

Flow Constraints



Catchment	No. licences with conditions currently operational in Jan	01-Jan	05-Jan	12-Jan	19-Jan	26-Jan	31-Jan
		START	WK1	WK2	WK3	WK4	END
		Number at Start of the month in force	No. licences with condition in Force in Jan	No. licences with Flow Condition in Force in Jan	No. licences with Flow Condition in Force in Jan	No. licences with Flow Condition in Force in Jan	Number at End of the month in force
Adur & Ouse	7	0	0	0	0	0	0
Arun & Western	36	0	0	0	0	0	0
Cuckmere & Pevensey	7	0	0	0	0	0	0
East Hampshire	11	0	0	0	0	0	0
IOW	29	0	0	0	0	0	0
New Forest	10	0	0	1	0	0	0
Test & Itchen	28	0	0	0	0	0	0
Total in SSD	128	0	0	1	0	0	0

Forward look- river flow and groundwater March 2021



Projected river flows at key indicator sites up until the end of March 2021. Projected groundwater levels at key indicator sites at the end of March 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 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