

Monthly water situation report

Solent and South Downs Area

Summary – November 2020

Solent and South Downs (SSD) had average rainfall for November receiving 83% (74mm) of the LTA (90mm). Monthly mean river flows across SSD ranged from **normal to above normal**. Groundwater levels ranged from **below normal to exceptionally high**. Soil moisture deficits across SSD ended the month at zero. End of month reservoir stocks were significantly below average at Ardingly Reservoir (Ouse Catchment) and just above average Arlington Reservoir (Cuckmere catchment).

Rainfall

Solent and South Downs (SSD) had below average rainfall in November receiving 83% (74mm) of the LTA (90mm). All areal units recorded **normal** monthly totals but the western side of SSD was the wettest with rainfall totals closer to 90% of LTA while the eastern side had around 70% of LTAs. The highest November total was in the Lymington areal unit with 94% (81mm) of LTA (87mm) while the Isle of Wight, Hampshire Tertiaries and East Hampshire Chalk areal units all recorded 93% of LTA. The 14th November was the wettest day with the raingauges at Harestock (Hampshire Tertiaries), Portswood (East Hampshire Chalk) and Plumpton (East Sussex Chalk) recording 40mm. There were only 9 days of rain in the whole month but the rain on the 14th November represented 50% of monthly totals in just one day.

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**. Flows on the Test at Chilbolton and Broadlands, River Meon at Mislingford, River Itchen at Allbrook & Highbridge, Western Rother at Iping Mill and River Cuckmere at Cowbeech were in the **above normal** range. The remaining six reporting sites flows were in the **normal** range. In response to the rainfall on the 14th November all sites recorded **exceptionally high** daily mean flows except Mislingford (Meon) and Chilbolton (River Test) which recorded **notably high** daily means.

Groundwater Levels

End of month groundwater levels ranged from **below normal to exceptionally high**. Preston Candover (East Hampshire Chalk) ended the month at 95.9mAOD which is in the **exceptionally high** category. This represents the 2nd highest November level since 1975 and is only exceeded by the level in 2000 of 96.47mAOD. Groundwater levels at Lopcombe Corner (Test Chalk) and West Meon (East Hampshire Chalk) were **notably high**. West Meon's groundwater level represented the 3rd highest November 84.46mAOD on its 34 year record. Houndean Bottom (Ouse), Clanville Gate (Test Chalk) and Youngwoods Copse (Isle of Wight) were **above normal**. Beeding Hill (West Sussex Chalk) and Harting Common (Western Rother Greensand) recorded groundwater levels in the **below normal** category. All remaining reported sites recorded **normal** end of month groundwater levels.

Reservoir Storage/Water Resource Zone Stocks

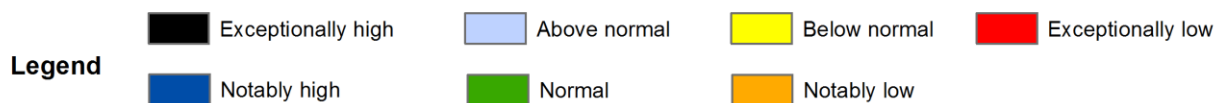
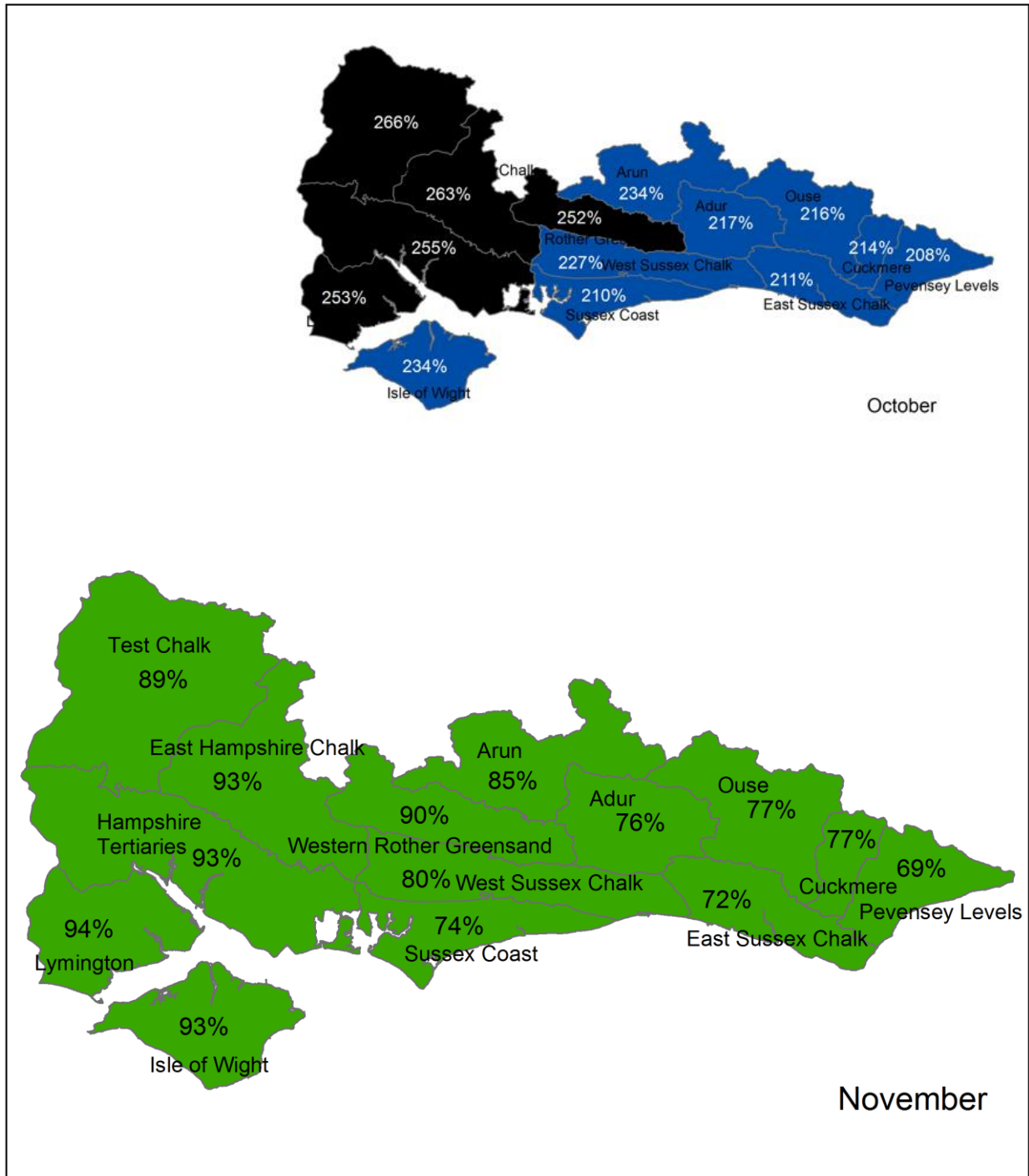
End of month reservoir stocks were below average at Ardingly Reservoir (Ouse Catchment) with 51% of total capacity (LTA 77%) and just above average at Arlington Reservoir (Cuckmere catchment) with 74% of total capacity (LTA 72%).

Environmental Impact

During November there were a total of 7 licences with restrictions in force, 3 of which were Public Water Supply licences. There were 16 fluvial Flood Alerts and 9 Flood Warning issued in November, mostly on the 14-15th.

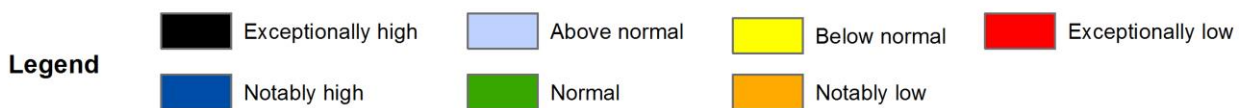
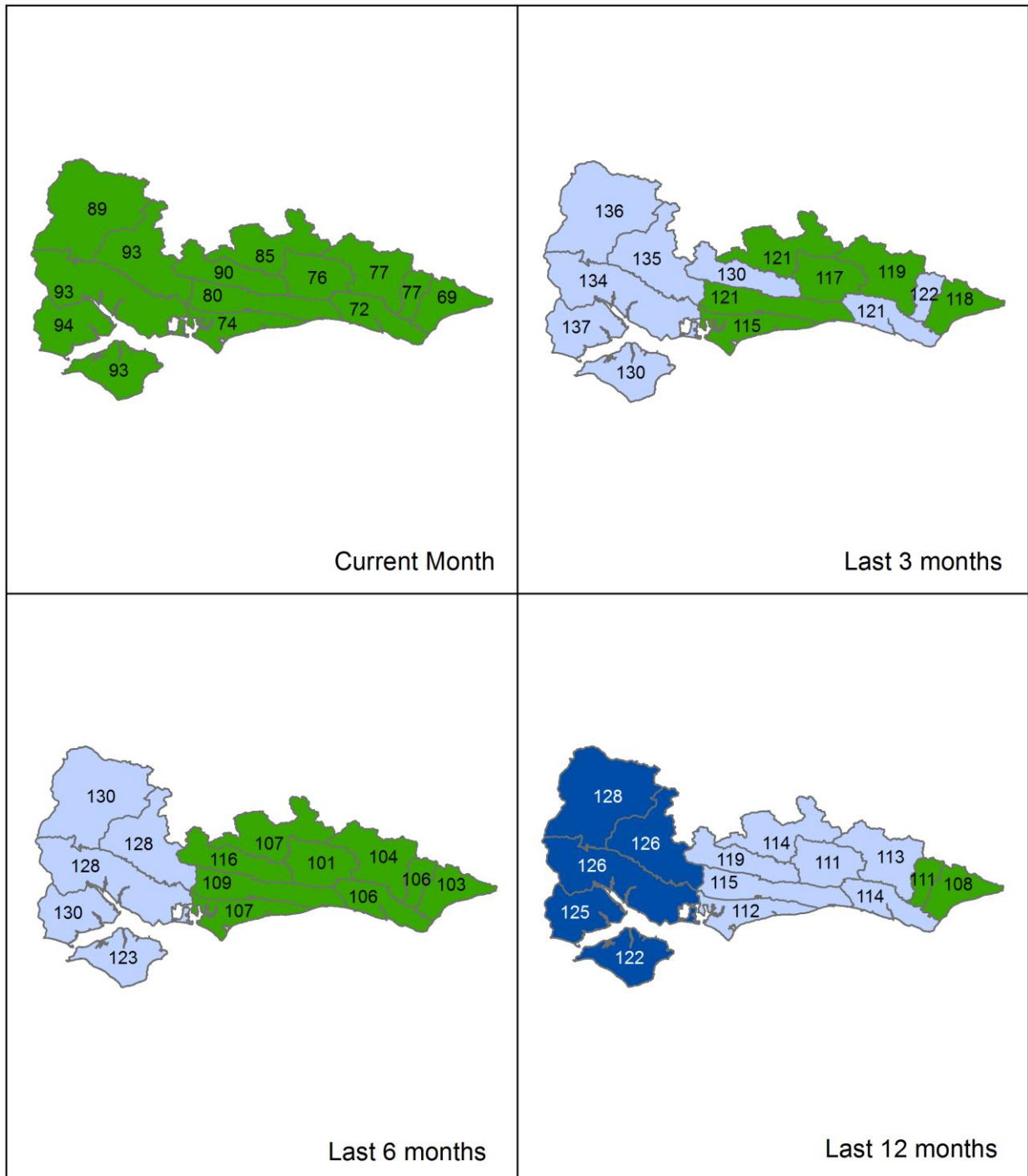
Author: [HydrologySSD](#)

Rainfall Map 1



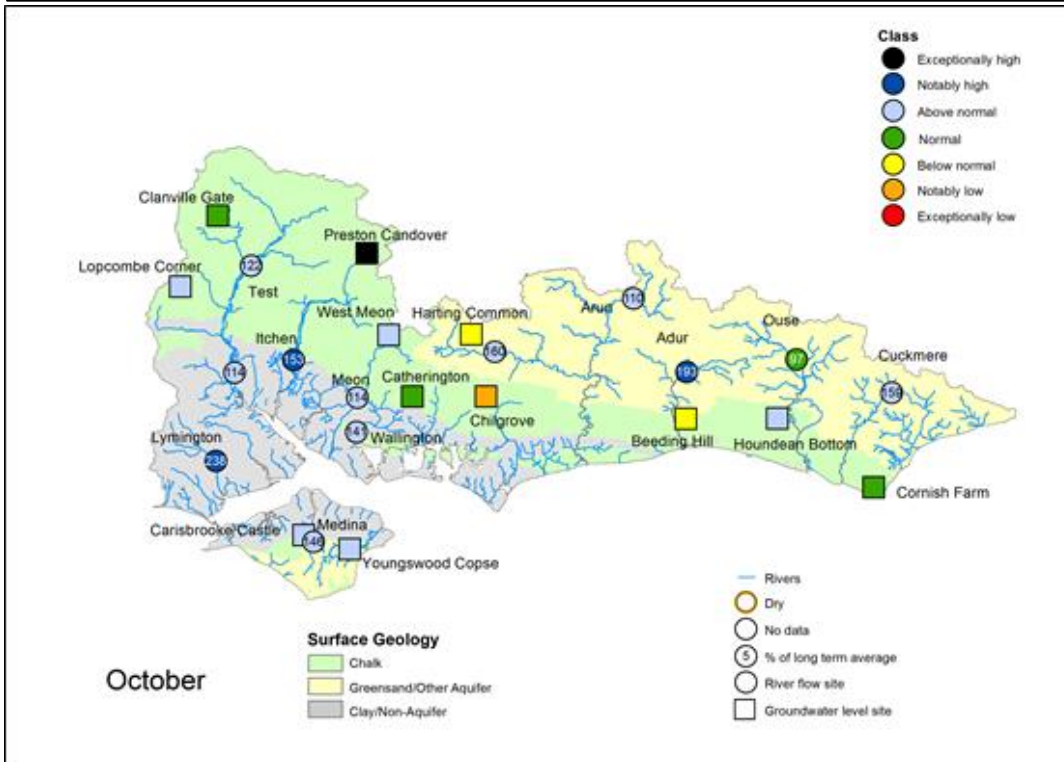
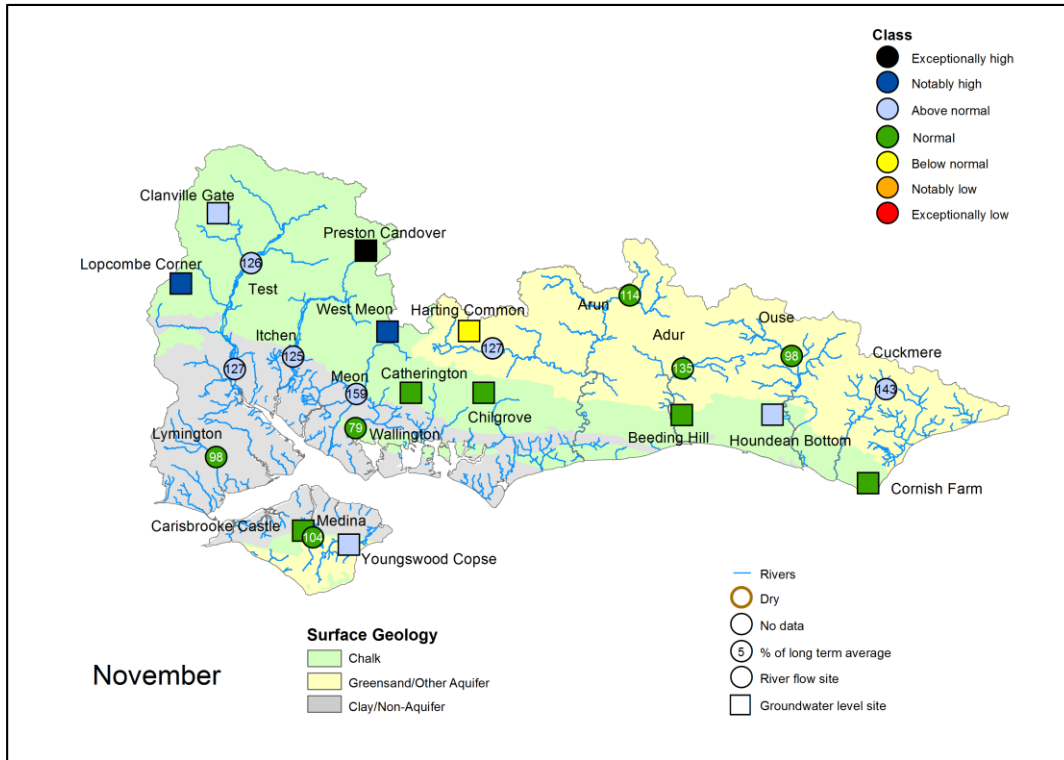
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material 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 30 November), 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



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

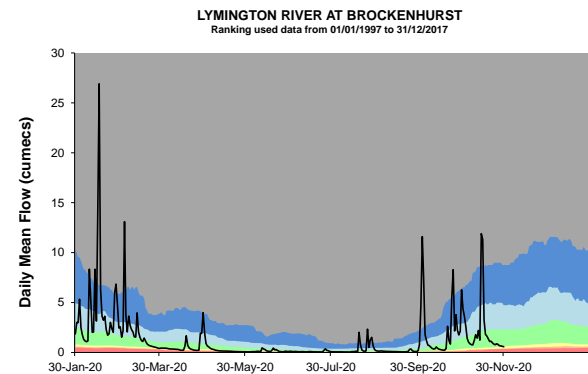
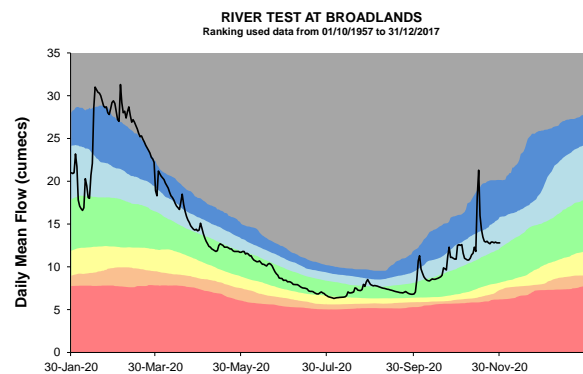
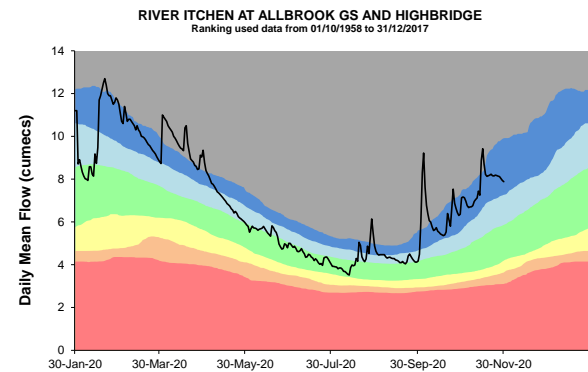
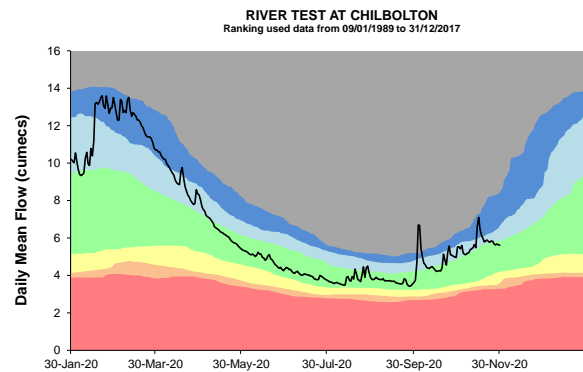
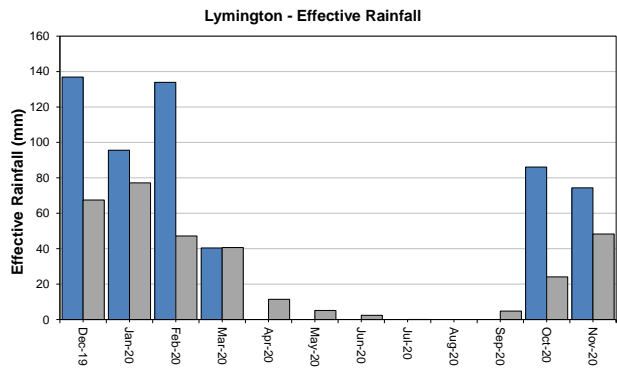
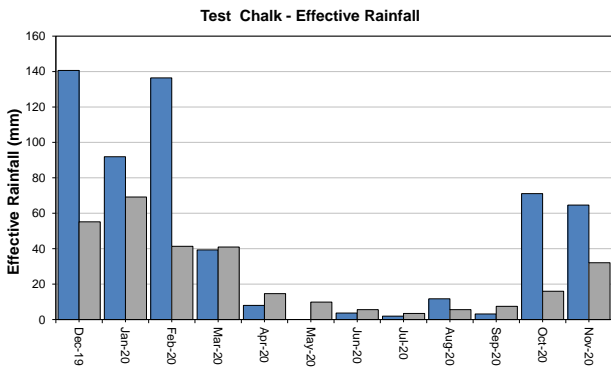
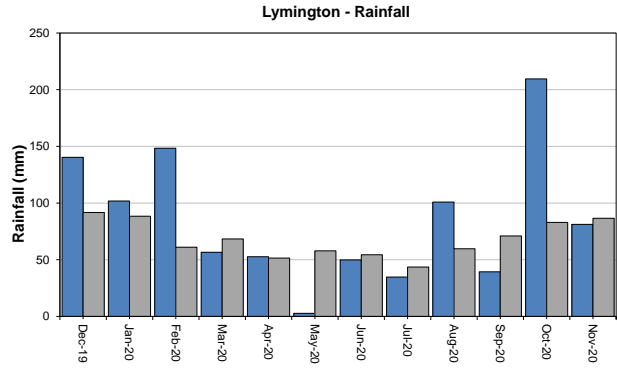
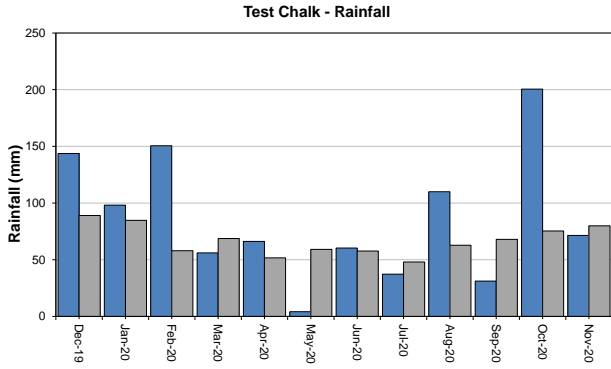
incident hotline
0800 80 70 60

floodline
0345 988 1188

West Hampshire – Page 1

Monthly total rainfall (mm)

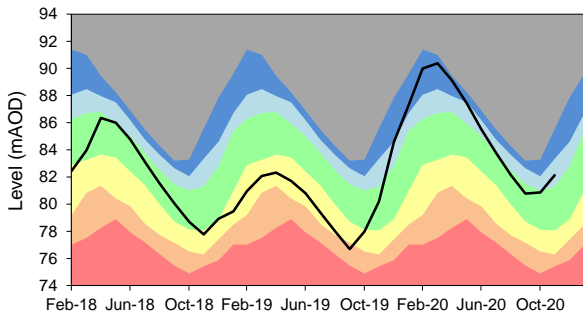
Long term average rainfall (mm)



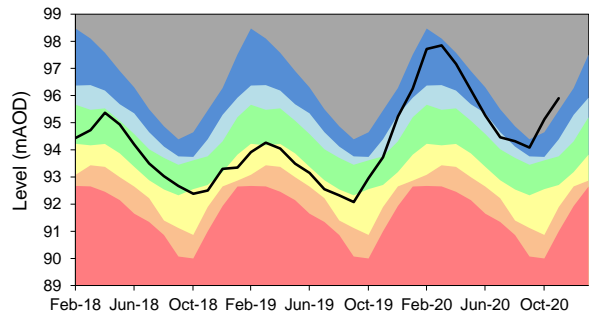
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Latest data
 Normal

West Hampshire – Page 2

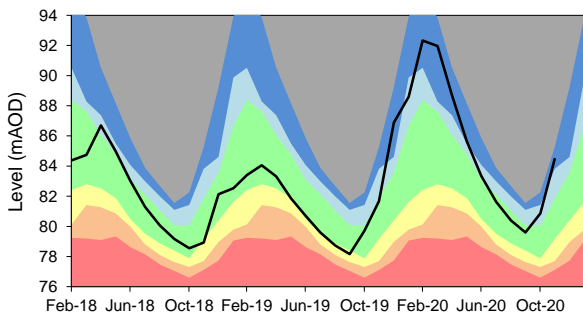
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2017



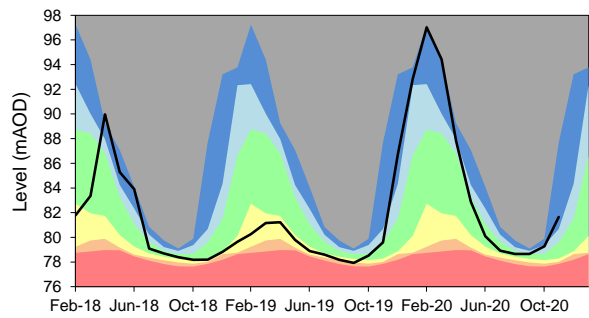
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2017



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



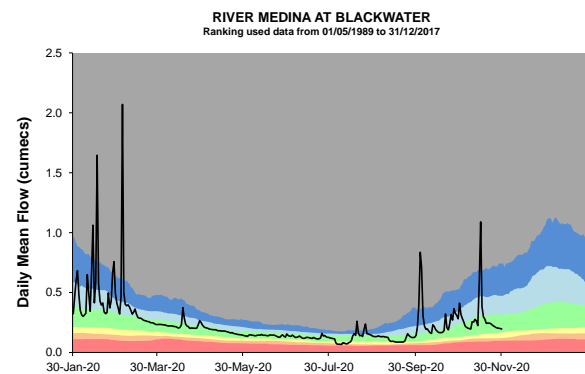
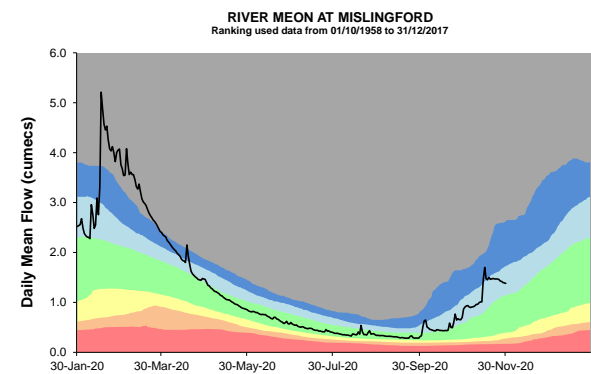
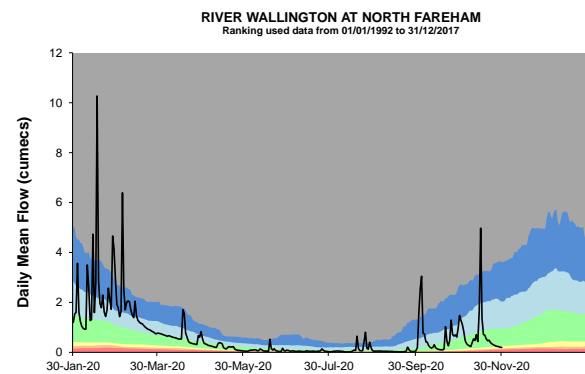
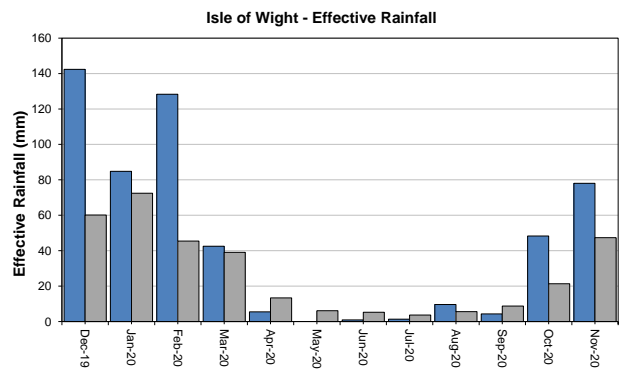
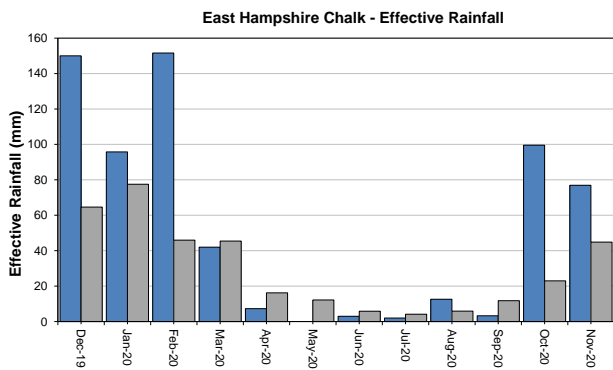
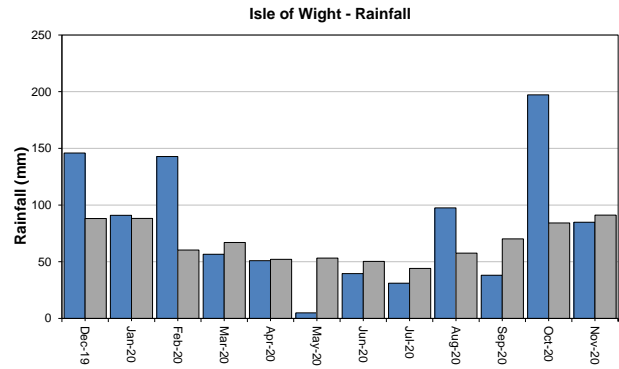
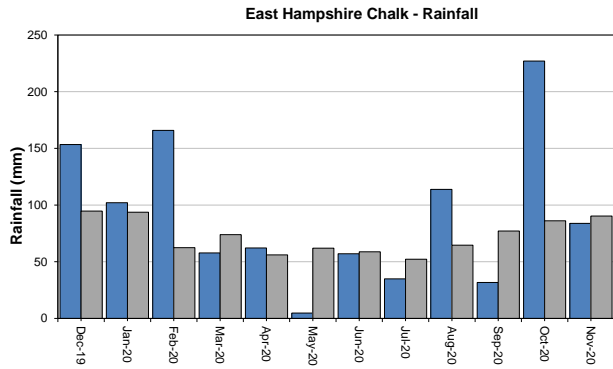
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2017



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

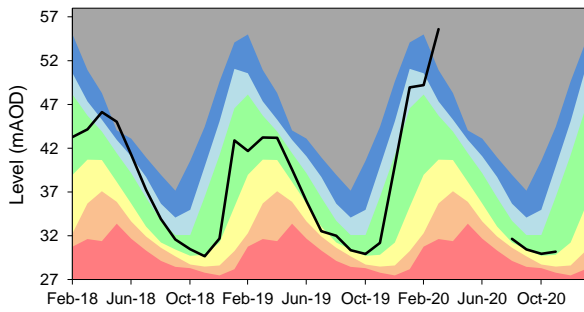
customer service line
03708 506 506

incident hotline
0800 80 70 60

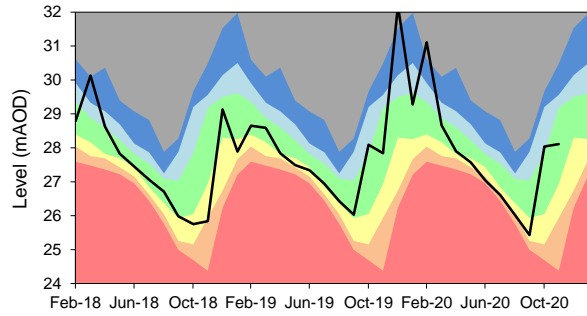
floodline
0345 988 1188

East Hampshire and Isle of Wight – Page 2

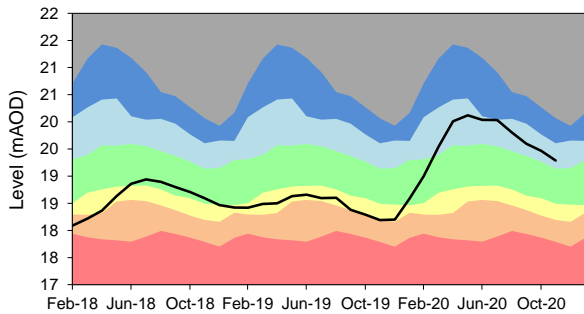
CATHERINGTON GWL - CHALK
 Ranking derived from data for the period Jan-1969 to Dec-2017



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



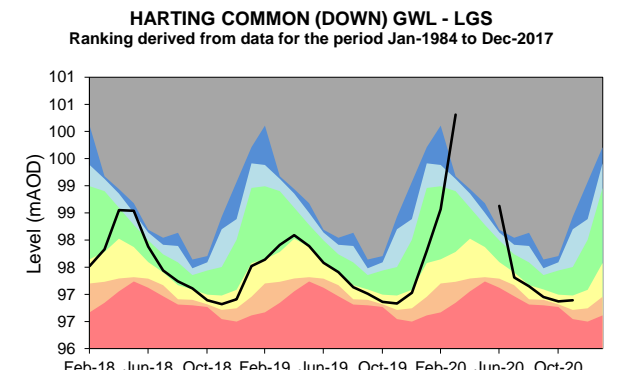
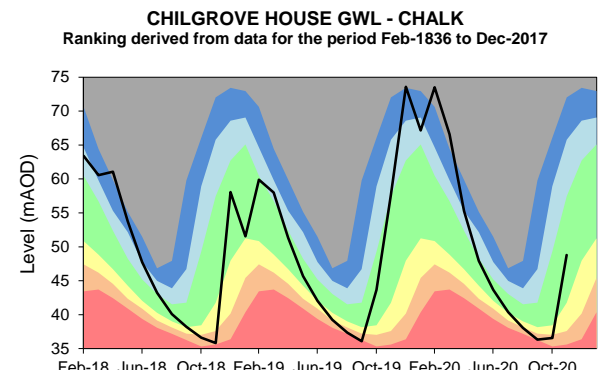
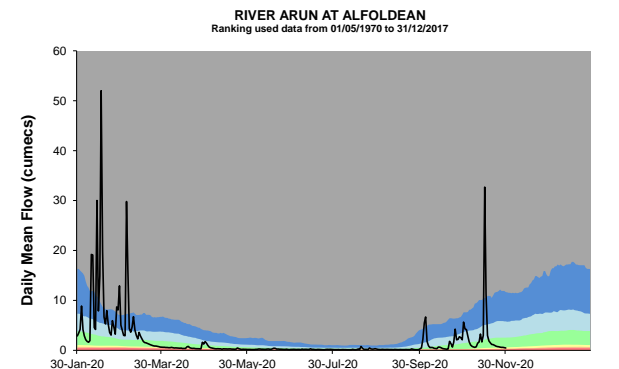
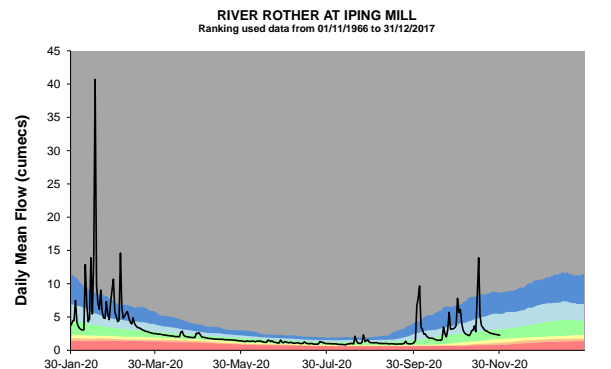
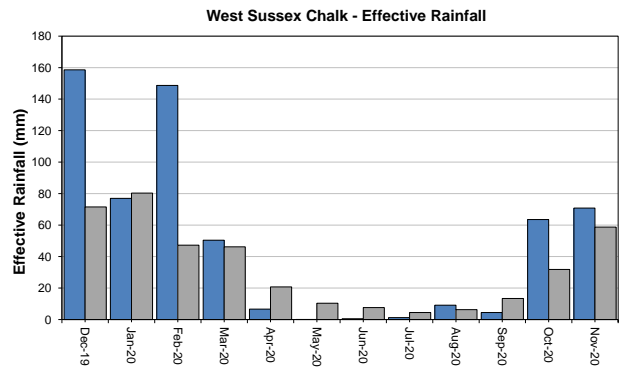
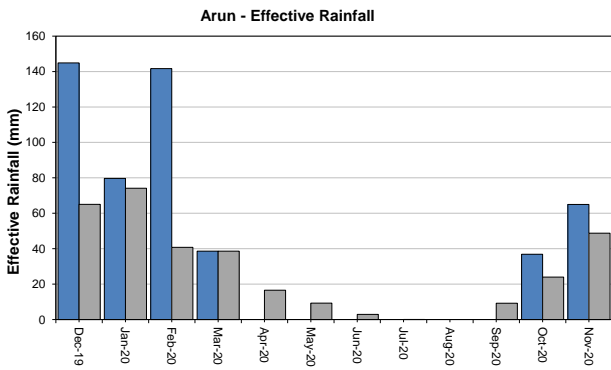
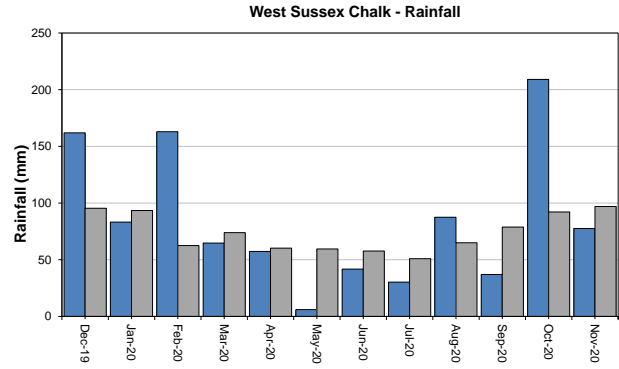
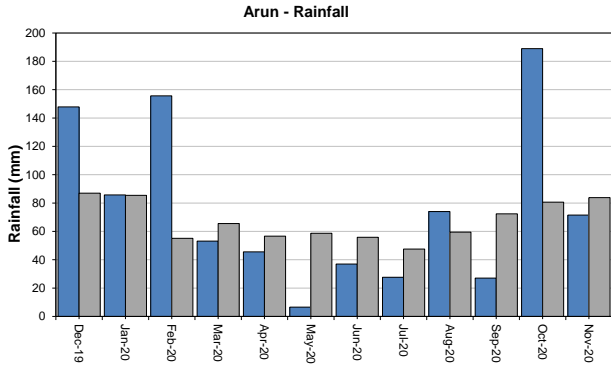
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2017



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

customer service line
03708 506 506

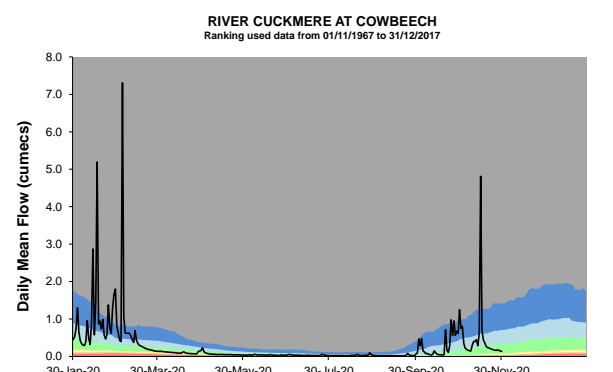
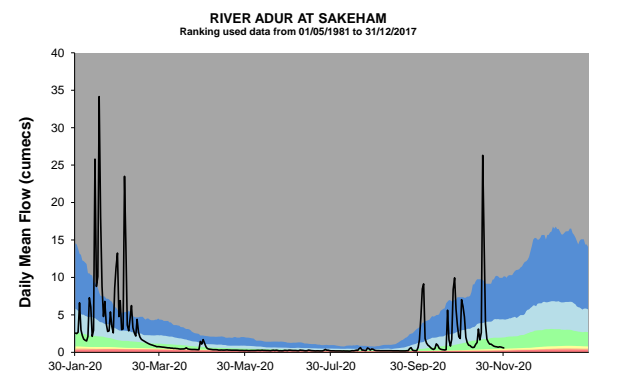
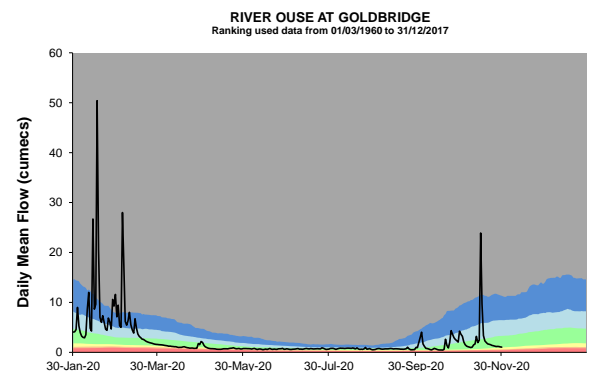
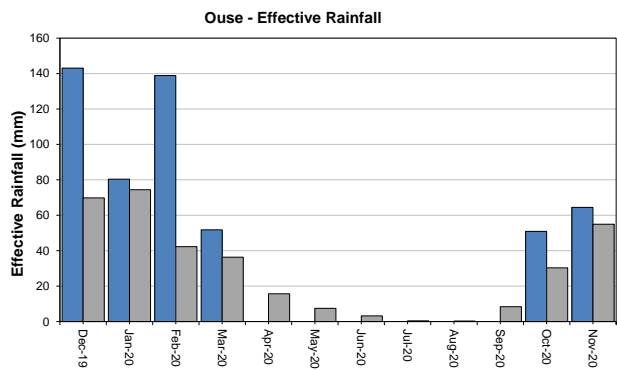
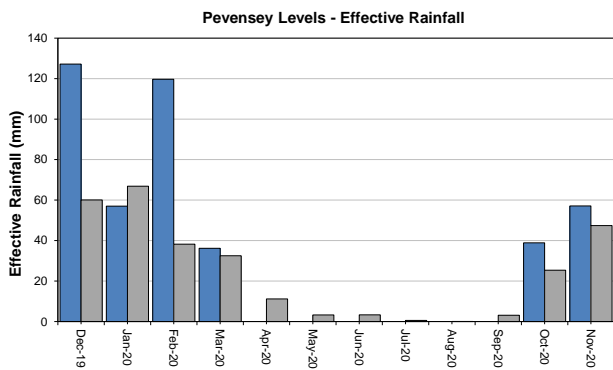
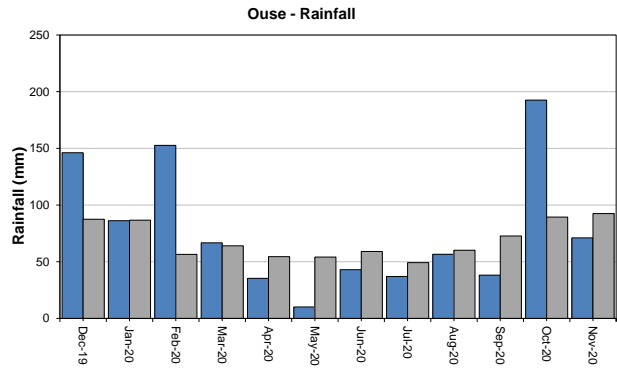
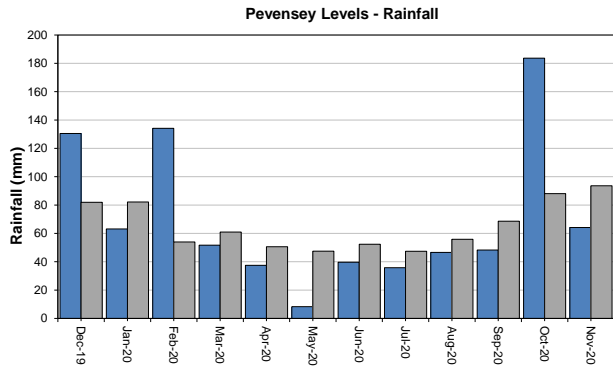
incident hotline
0800 80 70 60

floodline
0345 988 1188

East Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)

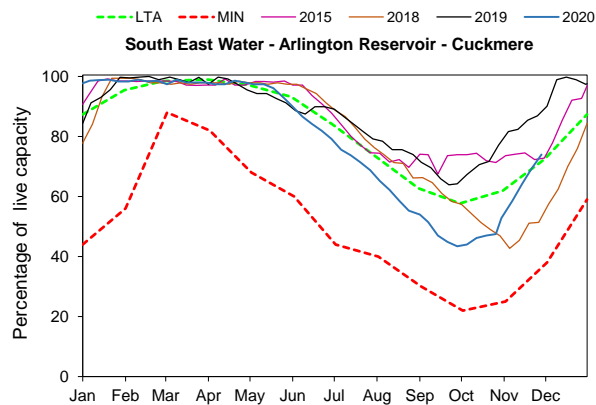
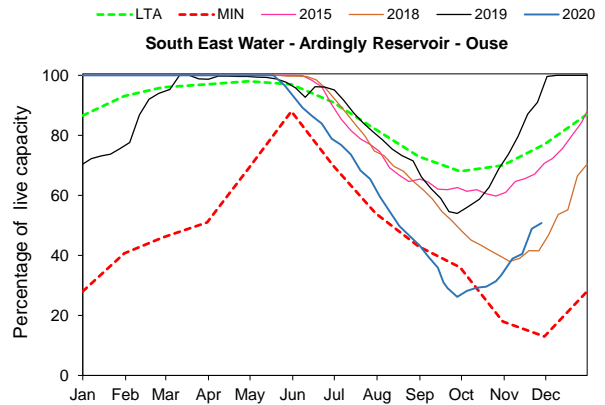
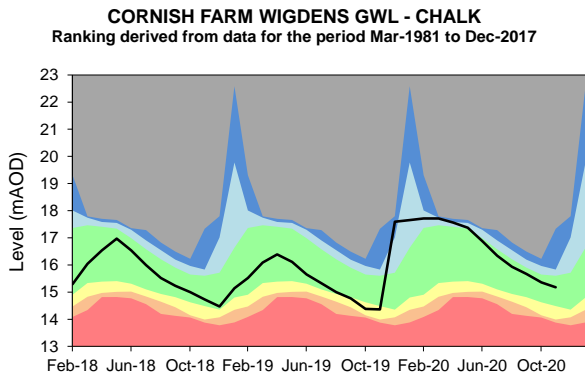
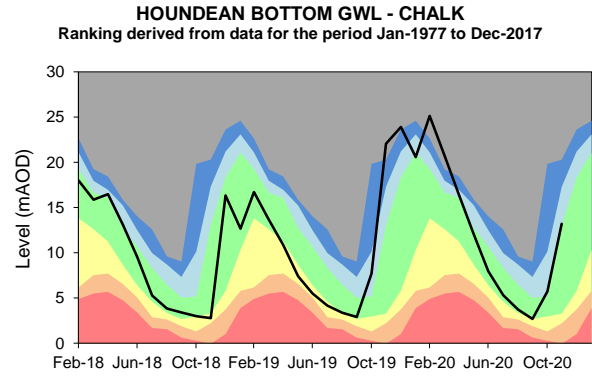
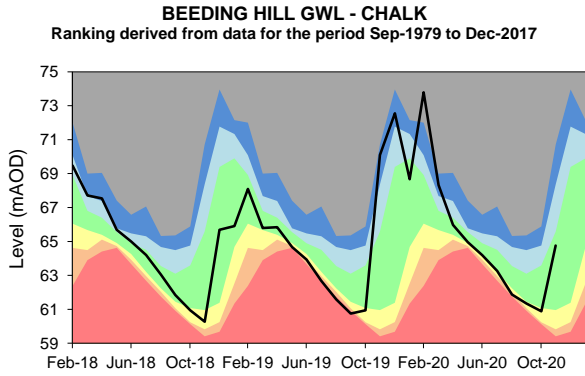


Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

East Sussex – Page 2

Monthly total rainfall (mm)

Long term average rainfall (mm)



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	71	80	89	65	32	201
East Hampshire Chalk	84	90	93	77	45	172
West Sussex Chalk	78	97	80	71	59	121
East Sussex Chalk	70	98	72	63	52	121
Isle of Wight	85	91	93	78	47	165
Western Rother Greensand	85	95	90	79	51	154
Hampshire Tertiaries	77	83	93	70	43	163
Lymington	81	87	94	74	48	154
Sussex Coast	59	81	74	53	39	137
Arun	72	84	85	65	49	133
Adur	67	89	76	60	50	121
Ouse	71	93	77	64	55	117
Cuckmere	72	94	77	65	50	129
Pevensey Levels	64	94	69	57	47	121
Solent and South Downs	74	90	83	67	48	141

Winter rainfall and effective rainfall

Winter totals for the period 1 October to the 30 November 2020

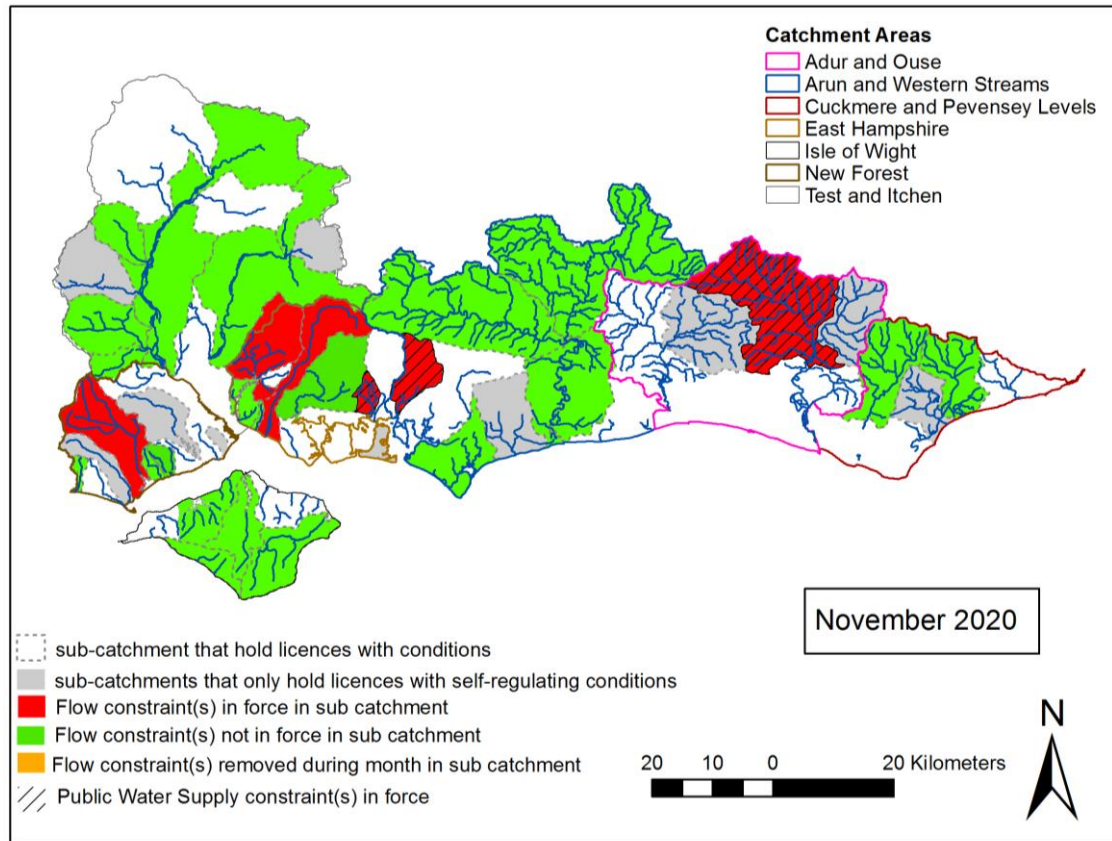
Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	272	155	175	136	48	283
East Hampshire Chalk	311	177	176	177	68	260
West Sussex Chalk	287	189	152	134	91	148
East Sussex Chalk	267	191	139	114	83	138
Isle of Wight	282	175	161	126	69	184
Western Rother Greensand	314	186	169	161	79	204
Hampshire Tertiaries	277	162	171	144	61	235
Lymington	291	170	171	160	72	221
Sussex Coast	222	158	141	65	53	122
Arun	261	165	158	102	73	140
Adur	254	175	145	95	76	125
Ouse	264	182	145	115	85	135
Cuckmere	266	185	144	118	80	148
Pevensey Levels	248	182	136	96	73	132
Solent and South Downs	272	175	156	124	72	173

Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	0	28
East Hampshire Chalk	0	21
West Sussex Chalk	0	15
East Sussex Chalk	0	18
Isle of Wight	0	22
Western Rother Greensand	0	21
Hampshire Tertiaries	0	17
Lymington	0	15
Sussex Coast	0	20
Arun	0	14
Adur	0	14
Ouse	0	9
Cuckmere	0	9
Pevensy Levels	0	12
Solent and South Downs	0	17

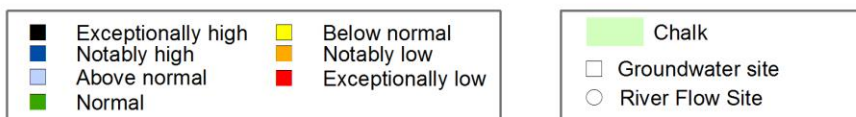
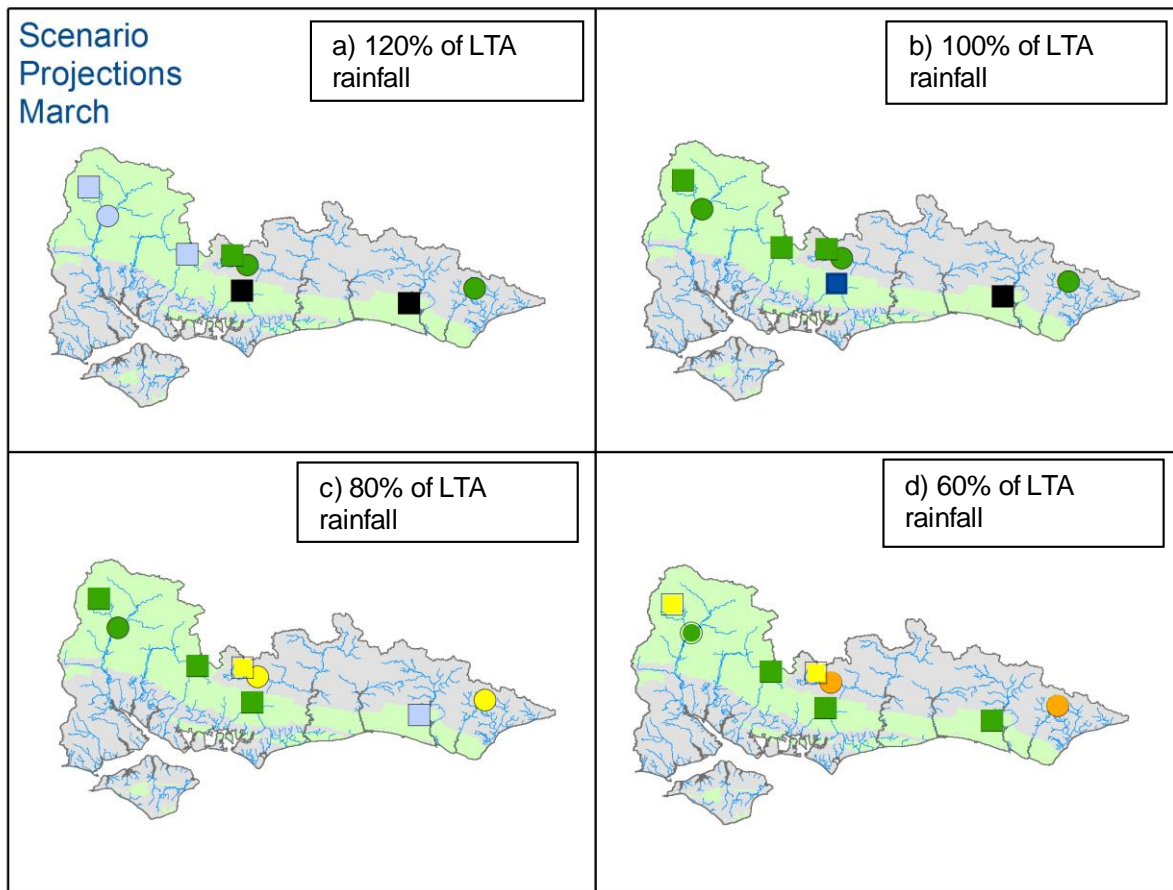
Environmental Impact

Flow Constraints



Catchment	No. licences with conditions currently operational in Nov	START	WK1	WK2	WK3	WK4	WK5/END
		Number at Start of the month in force	No. licences with Flow Condition in Force in Nov	No. licences with Flow Condition in Force in Nov	No. licences with Flow Condition in Force in Nov	No. licences with Flow Condition in Force in Nov	Number at End of the month in force
Adur & Ouse	3	0	0	0	0	0	1
Arun & Western Streams	38	1	1	1	1	1	1
Cuckmere & Pevensey	7	0	0	0	0	0	0
East Hampshire	21	1	2	2	2	3	3
Isle Of Wight	16	0	0	0	0	0	0
New Forest	16	0	0	0	0	1	2
Test & Itchen	24	3	0	0	0	0	0
Total in SSD	125	5	3	3	2	5	7

Forward look- river flow and groundwater September 2020



Projected river flows at key indicator sites up until the end of March 2020. Projected groundwater levels at key indicator sites at the end of March 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 (m^3s^{-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