

Monthly water situation report

Solent and South Downs Area

Summary – February 2021

Solent and South Downs (SSD) had average rainfall in February receiving 105% (61mm) of the LTA (58mm). Monthly mean river flows and groundwater levels across SSD ranged from **normal** to **notably high**. Soil moisture deficits across SSD ended the month close to average for the time of year. End of month reservoir stocks were above average at Ardingly Reservoir (Ouse Catchment) and slightly below average at Arlington Reservoir (Cuckmere catchment).

Rainfall

Solent and South Downs (SSD) had average rainfall in February, receiving 105% (61mm) of the LTA (58mm). During February the Lymington areal unit received the most rainfall (121% of LTA) and the Pevensey Levels areal unit received the least rainfall (82% LTA). Overall the west of SSD received more rainfall than the east.

Most of the rainfall was recorded in the first and third weeks of the month with the wettest day occurring on the 14th of February. On this day the majority of sites across the area recorded daily totals in excess of 10mm. The highest daily rainfall total was recorded at Brockenhurst (Lymington) with 24.3mm. The total rainfall for the winter period (1st of December to the 28th of February) was above average with 139% (569mm) of the LTA (409mm).

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs ended the month at around average for the time of year.

River Flows

Monthly mean river flows across SSD ranged from **normal** to **notably high**. The Itchen at Allbrook & Highbridge recorded mean monthly flows in the **notably high** range. Flows recorded on the Ouse at Gold Bridge, the Test at Chilbolton and the Wallington River at North Fareham were all **normal**. All remaining reporting sites were in the **above normal** range.

Groundwater Levels

End of month groundwater levels ranged from **normal** to **notably high**. The groundwater levels at Chilgrove (West Sussex Chalk) and Preston Candover (East Hampshire Chalk) were both **notably high**. The level at Preston Candover was the 5th highest on record for February in a record going back to 1975. Clanville Gate (Test Chalk), Cornish Farm Wigdens (East Sussex Chalk), Houndean Bottom (East Sussex Chalk), Lopcombe Corner (Test Chalk) and West Meon (East Hampshire Chalk) recorded **above normal** groundwater levels. All remaining reporting sites recorded end of month groundwater levels in the **normal** range.

Reservoir Storage/Water Resource Zone Stocks

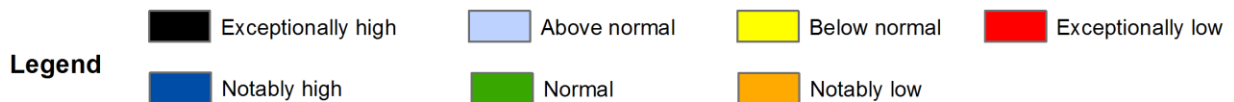
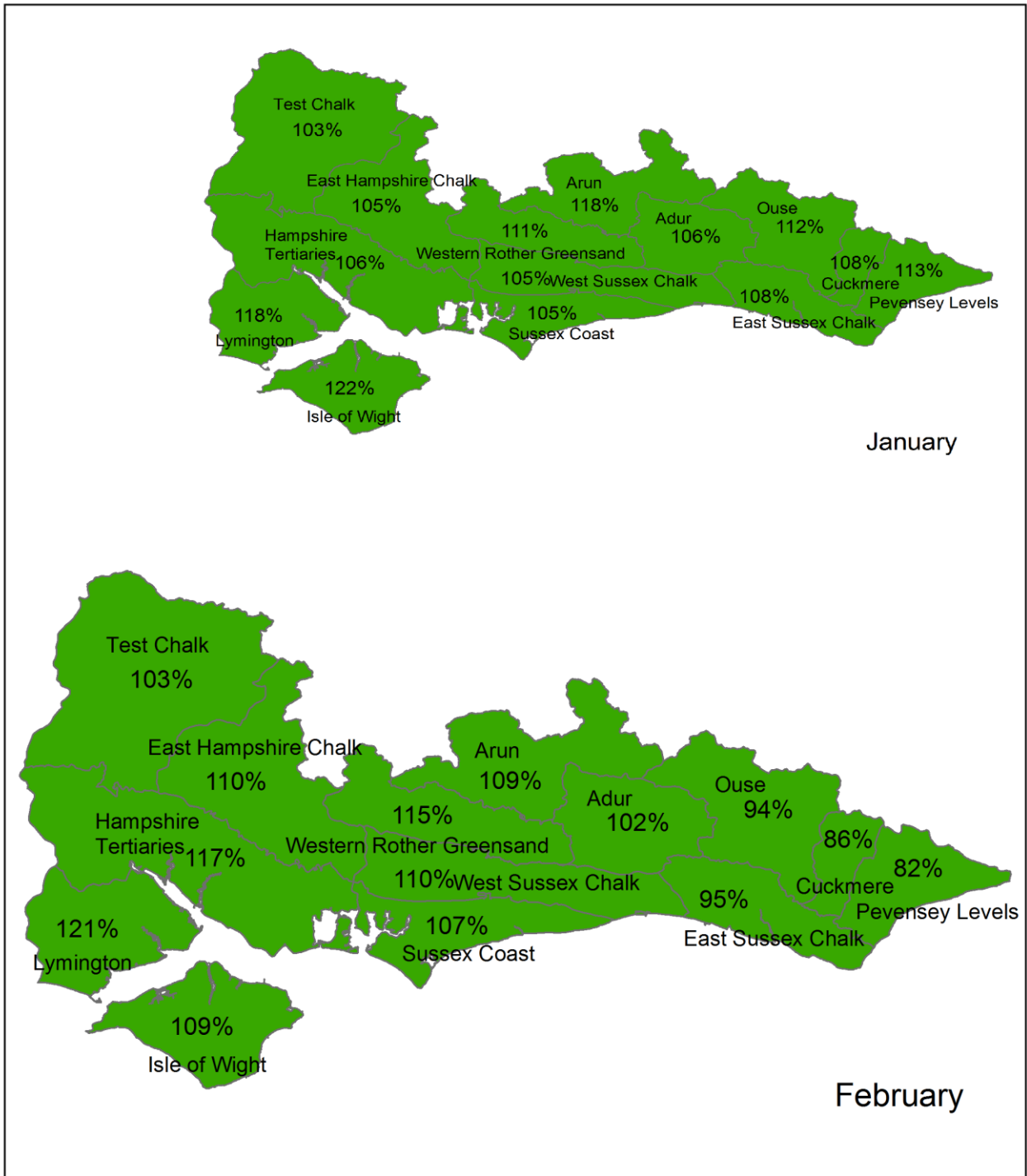
End of month reservoir stocks were above average at Ardingly Reservoir (Ouse) with 100% of total capacity (LTA 96%) and slightly below average at Arlington Reservoir (Cuckmere) with 95.8% of total capacity (LTA 98.5%).

Environmental Impact

During February there were no licence restrictions in force. There was 1 fluvial flood alert on 5th February for the Loxwood Stream in the Arun Catchment.

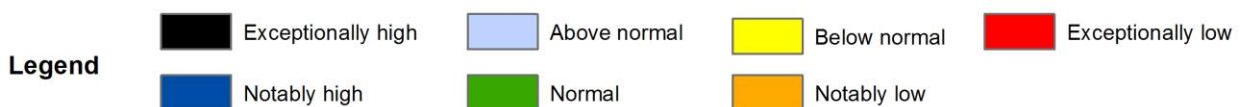
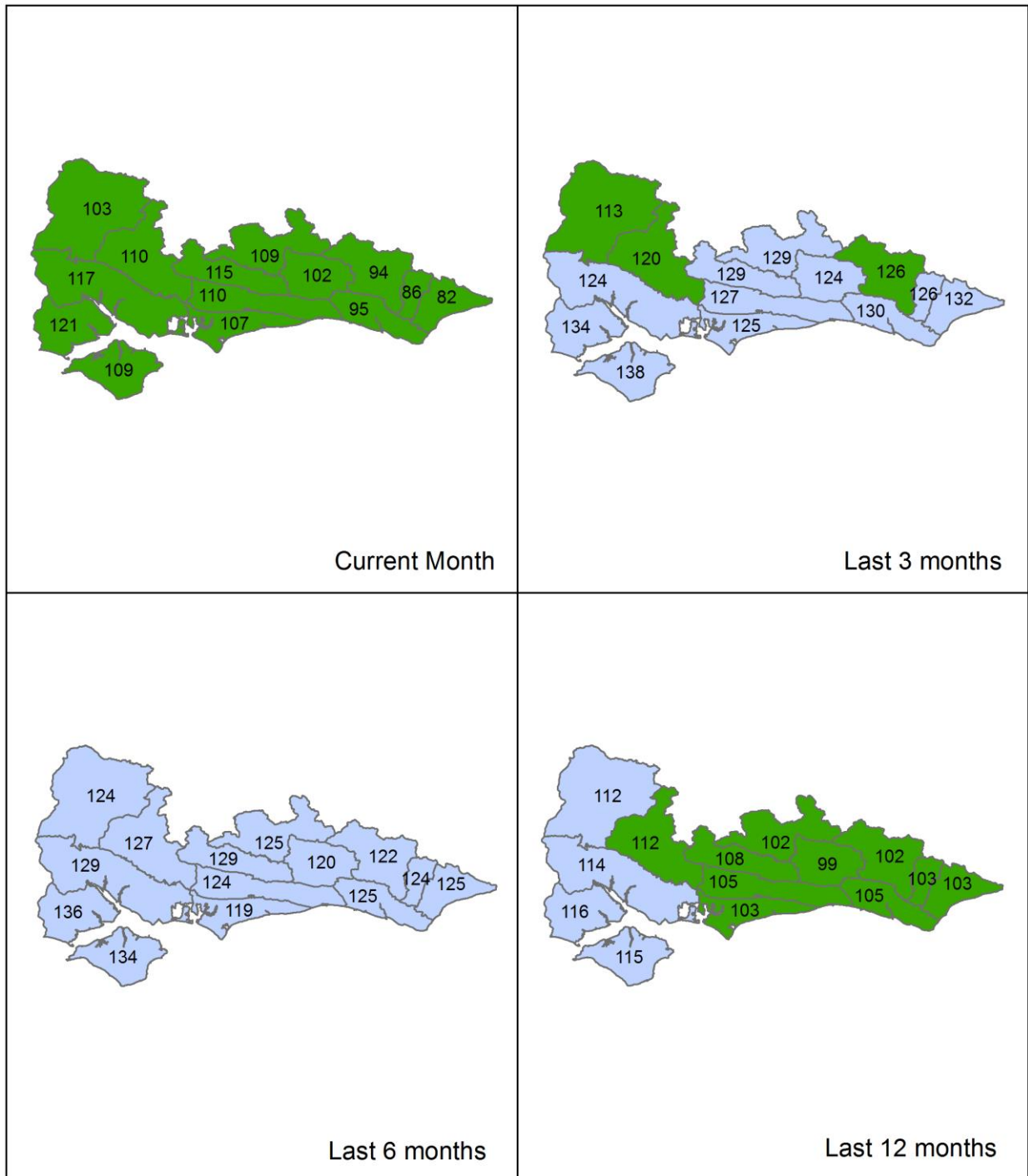
Author: [HydrologySSD](#)

Rainfall Map 1



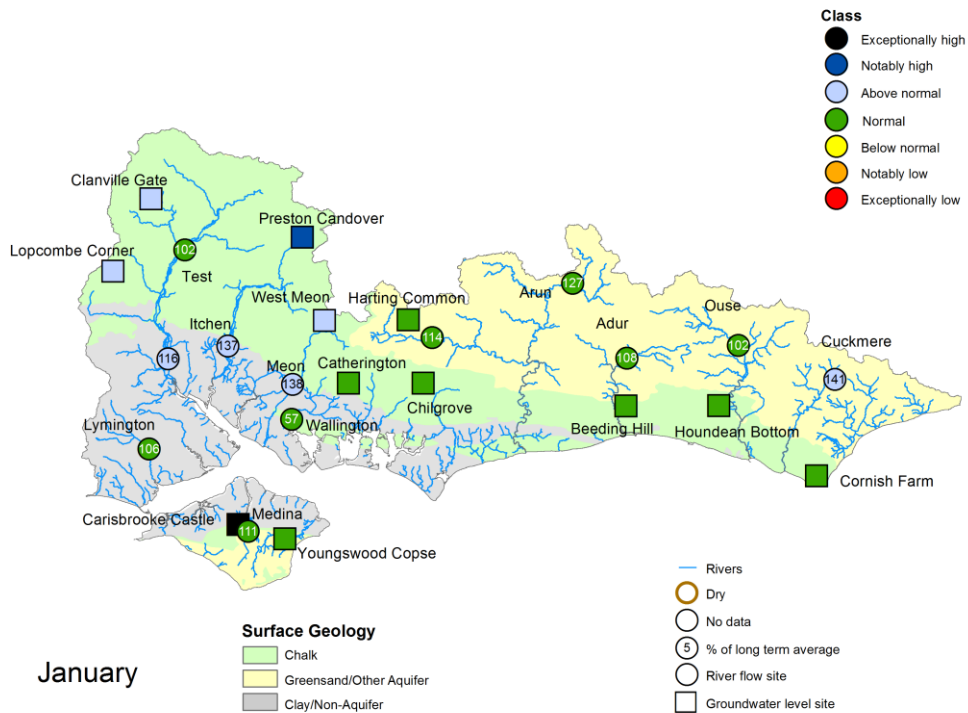
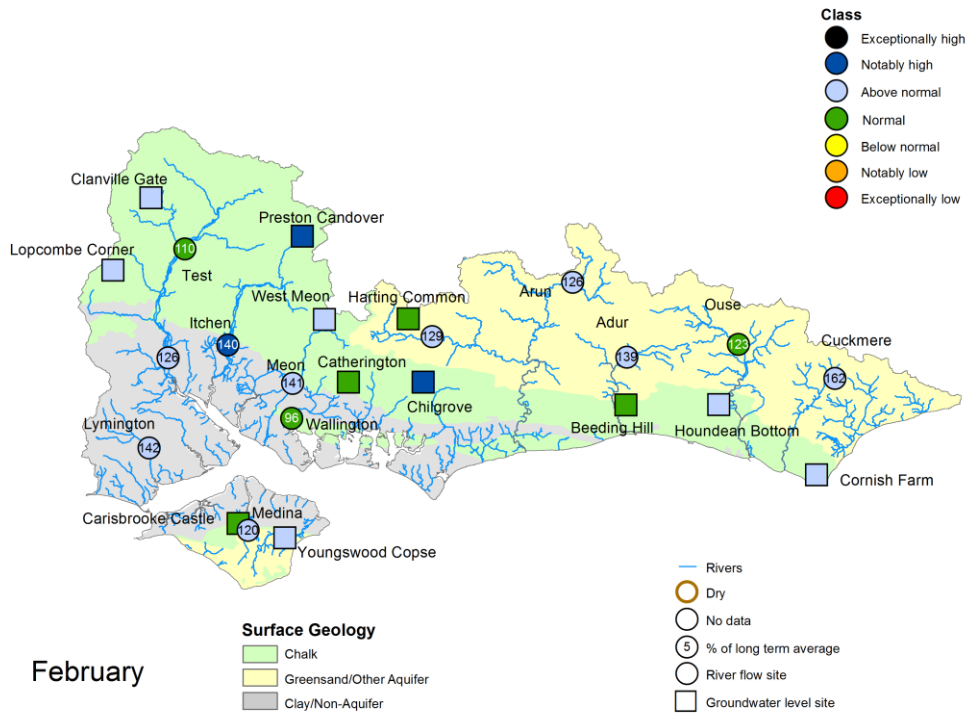
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material 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 28 February), 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, 2021). 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.

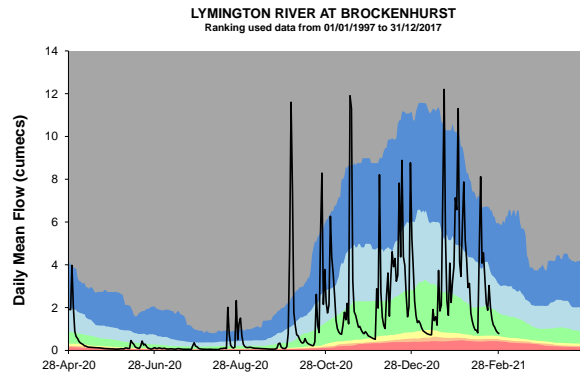
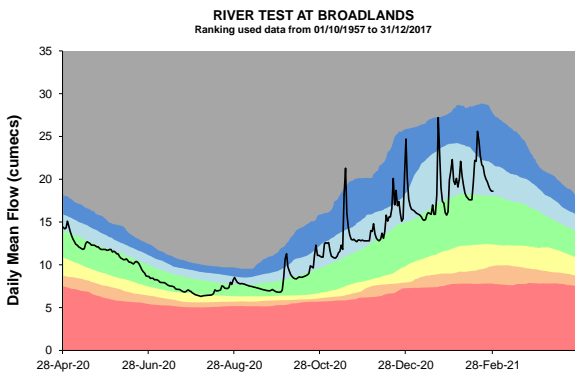
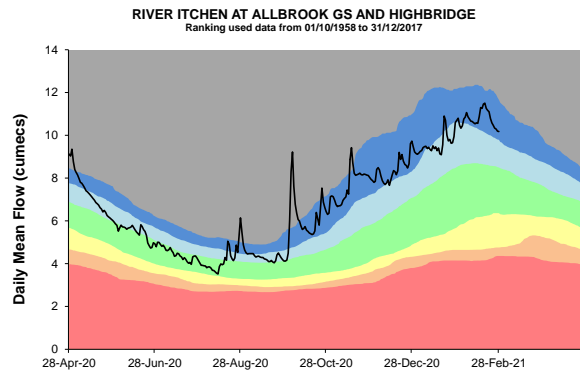
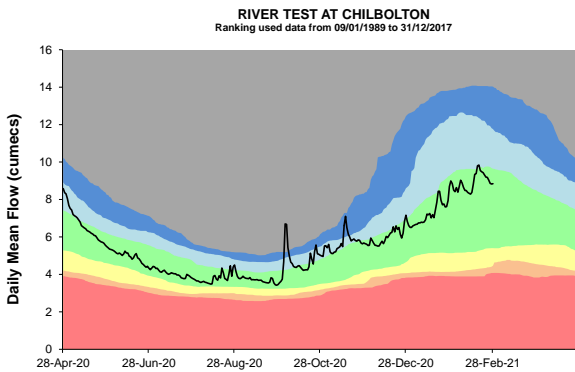
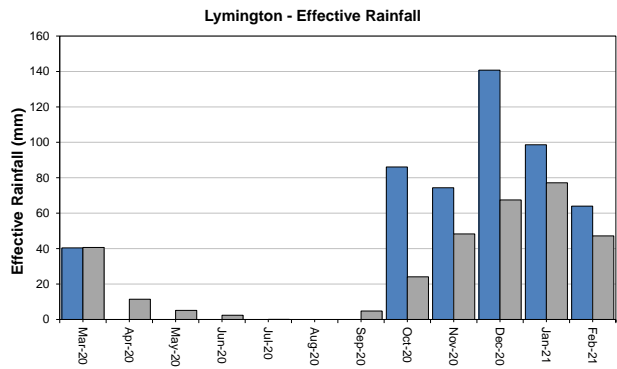
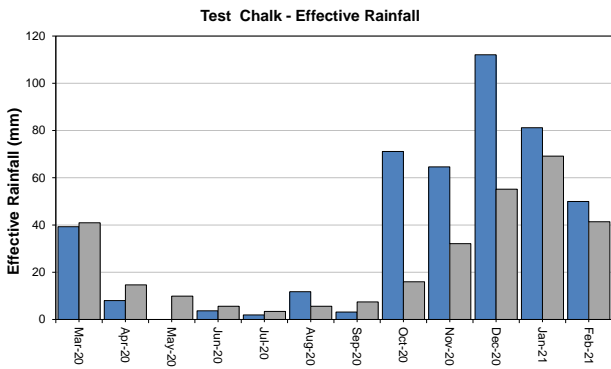
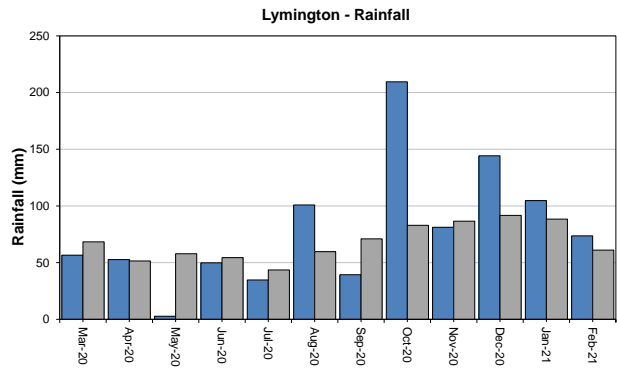
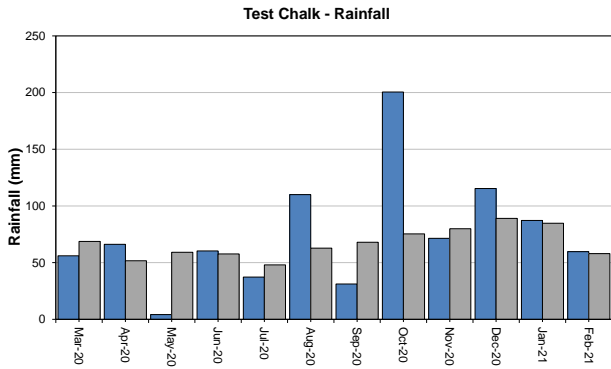
Some features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology, © CEH. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of Her Majesty's Stationery Office © Crown copyright. All rights reserved. Environment Agency, 100026380, 2021

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

West Hampshire – Page 1

Monthly total rainfall (mm)

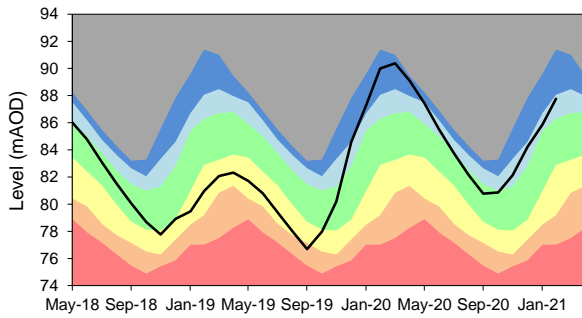
Long term average rainfall (mm)



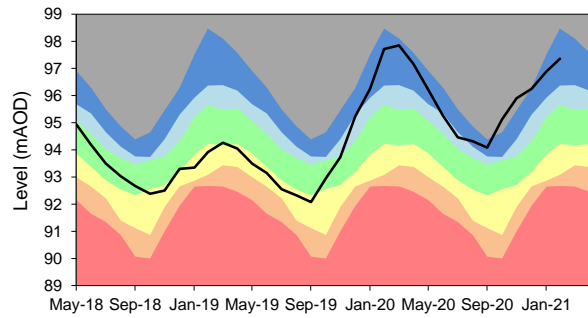
Exceptionally high
 Notably high
 Above normal
 Normal
 Below normal
 Notably low
 Exceptionally low
 — Latest data

West Hampshire – Page 2

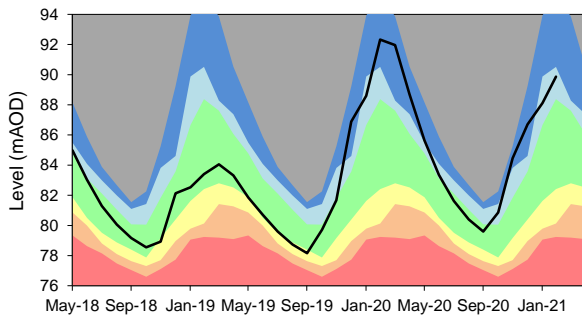
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2017



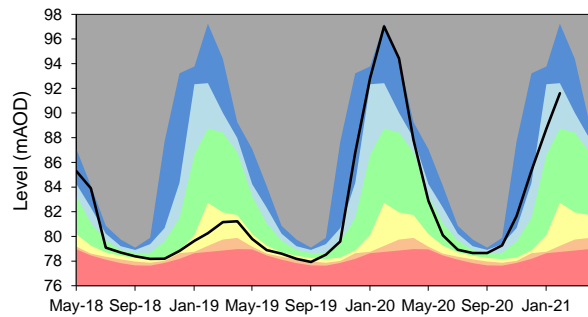
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2017



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



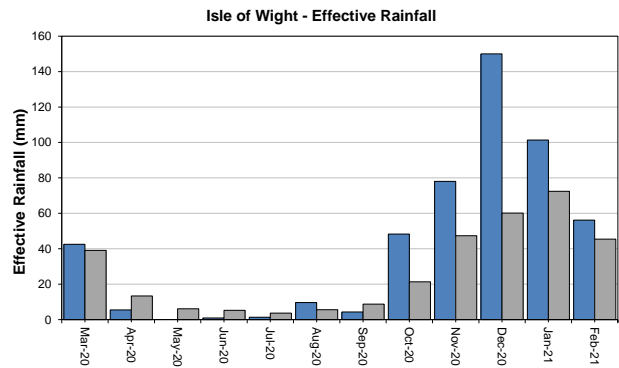
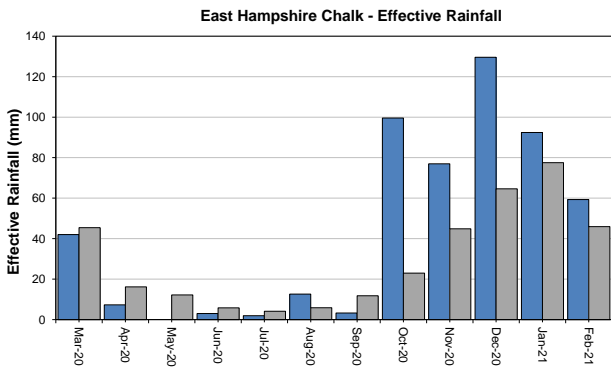
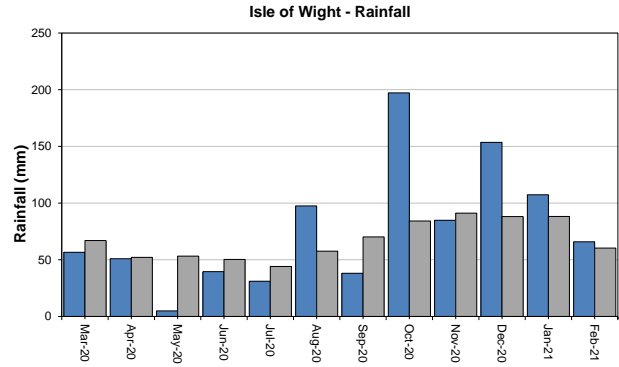
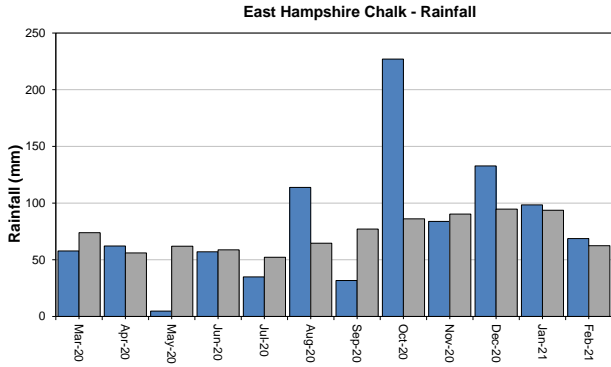
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2017



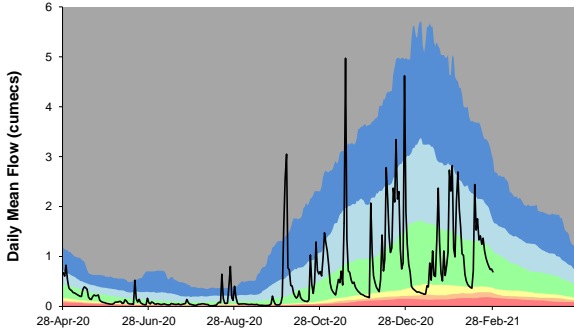
East Hampshire and Isle of Wight

Monthly total rainfall (mm)

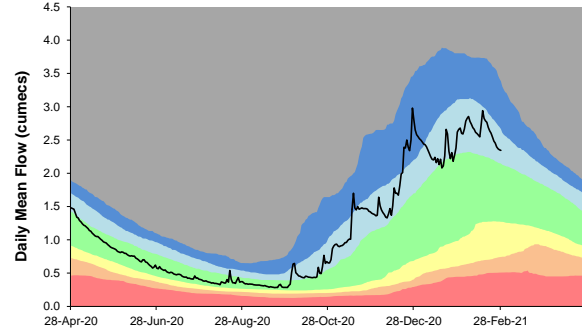
Long term average rainfall (mm)



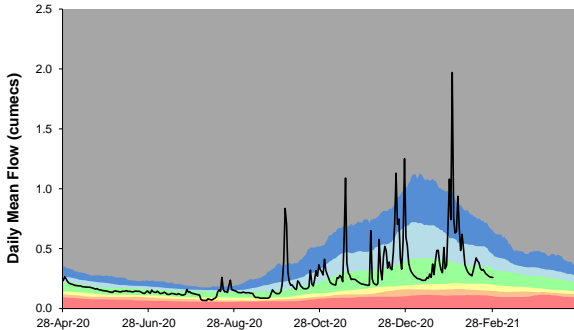
RIVER WALLINGTON AT NORTH FAREHAM
Ranking used data from 01/01/1992 to 31/12/2017



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

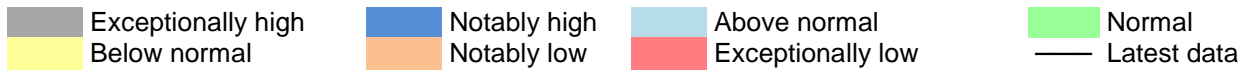
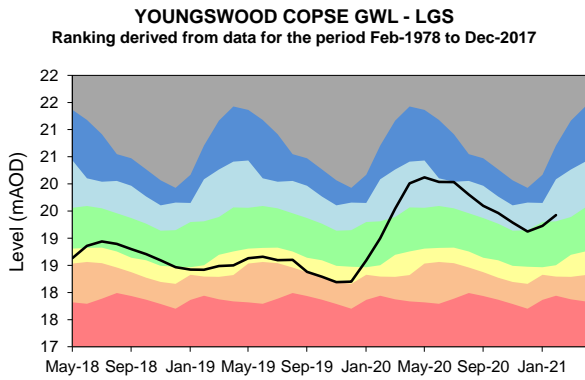
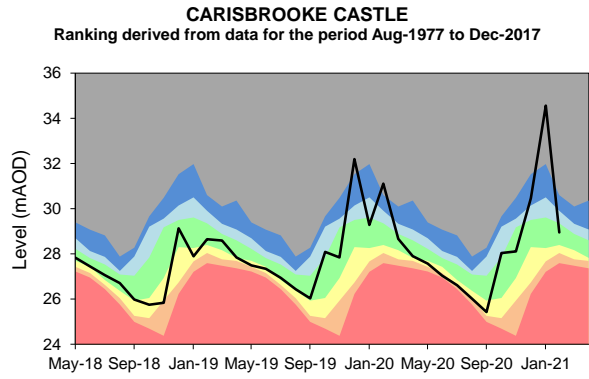
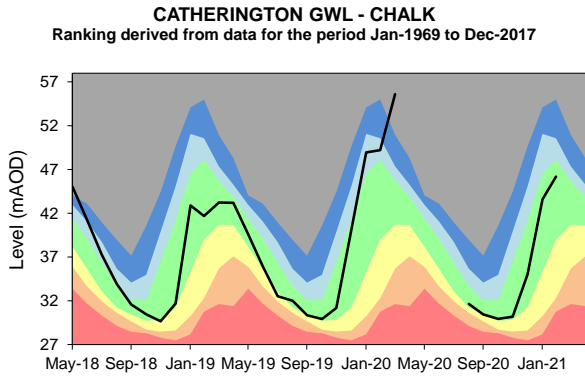


RIVER MEDINA AT BLACKWATER
Ranking used data from 01/05/1989 to 31/12/2017



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

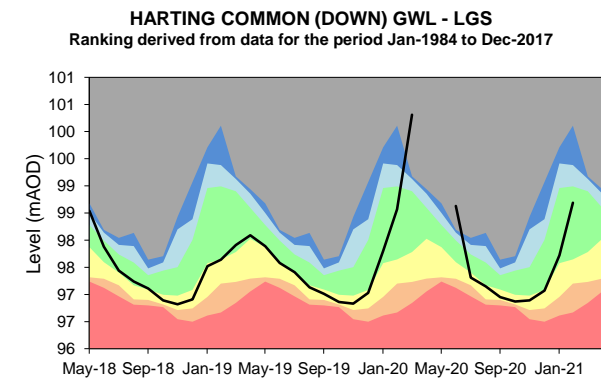
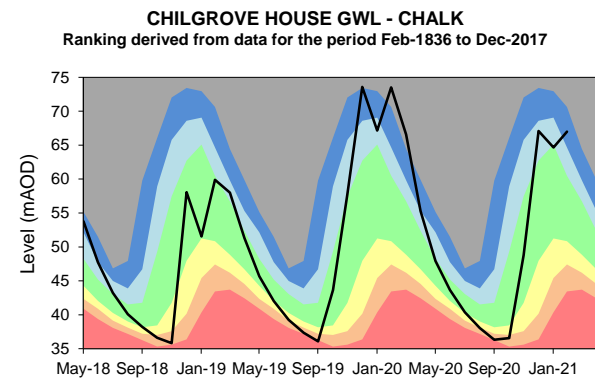
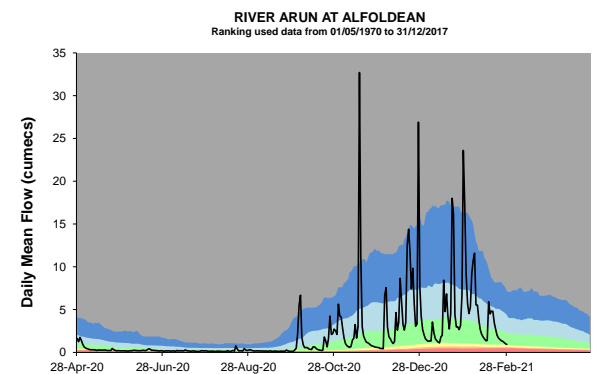
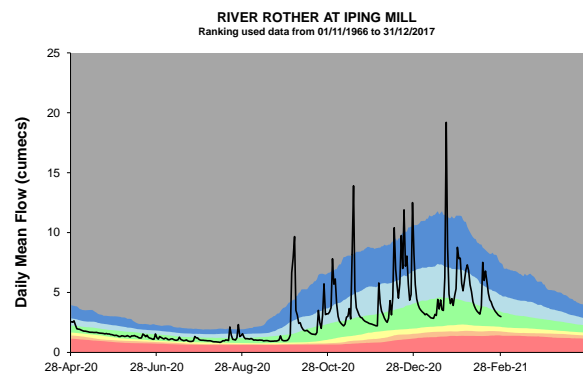
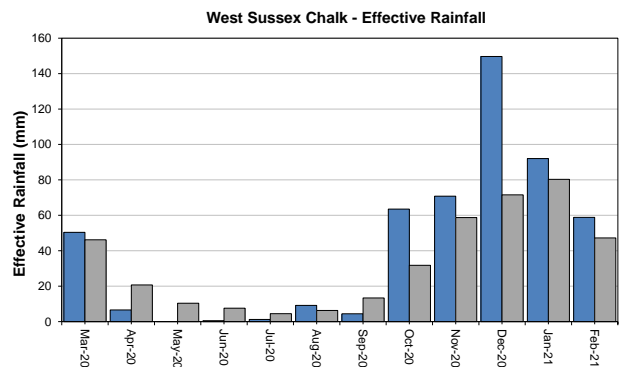
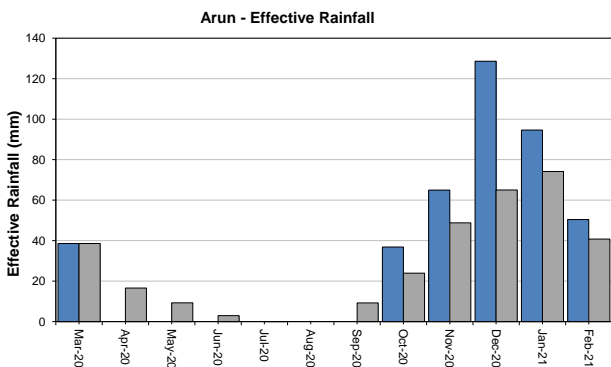
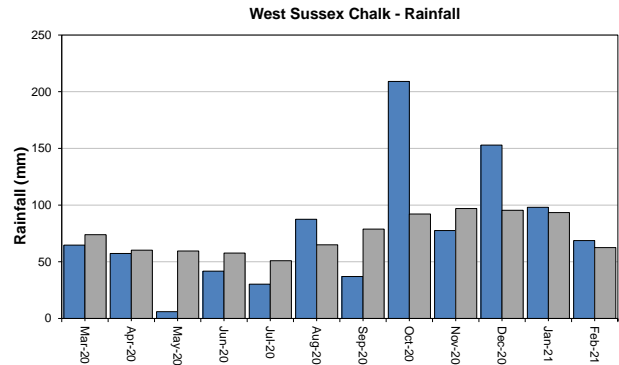
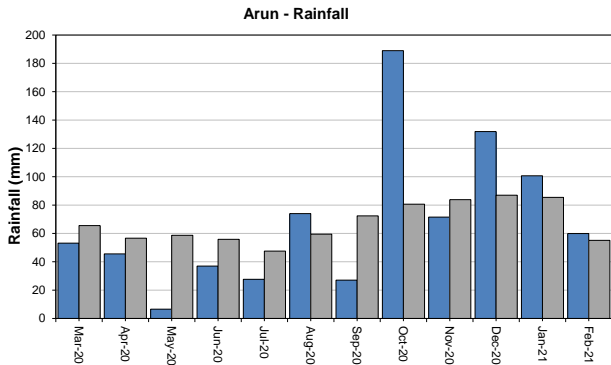
East Hampshire and Isle of Wight – Page 2



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

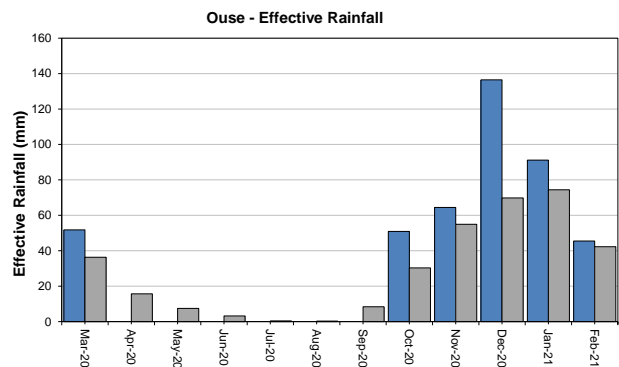
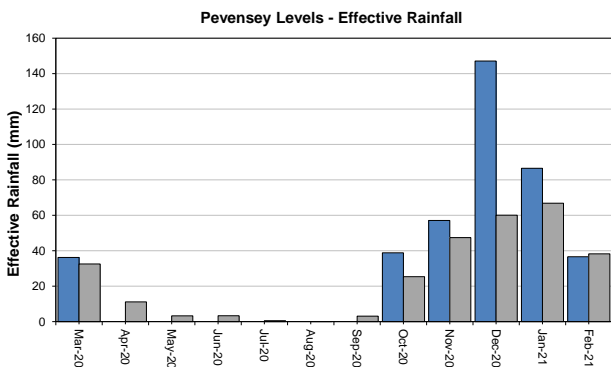
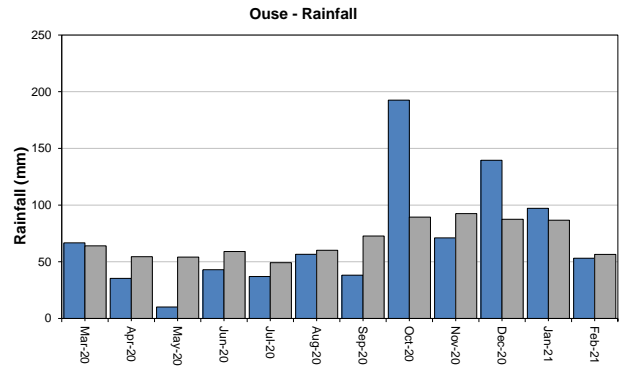
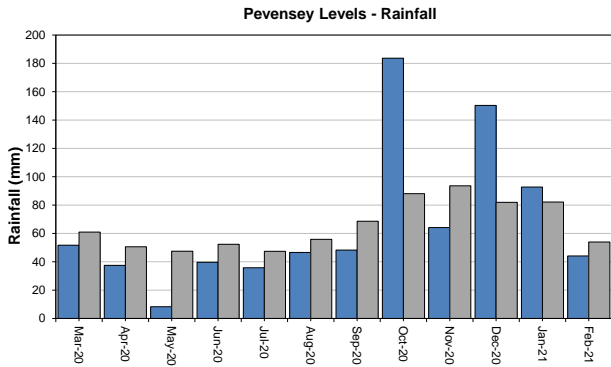
incident hotline
0800 80 70 60

floodline
0345 988 1188

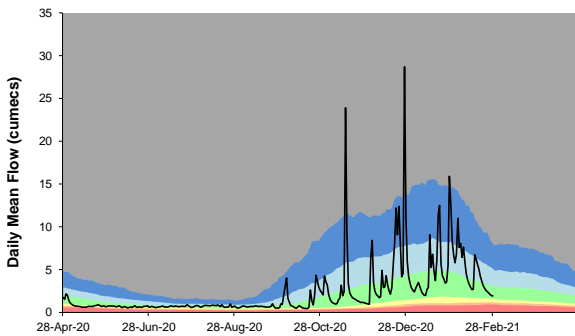
East Sussex

Monthly total rainfall (mm)

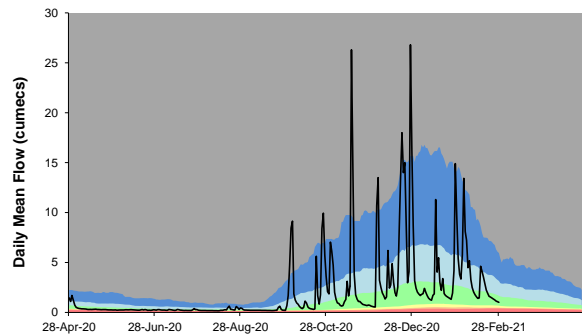
Long term average rainfall (mm)



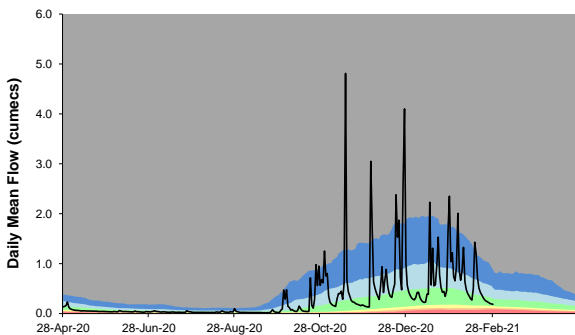
RIVER OUSE AT GOLDBRIDGE
Ranking used data from 01/03/1960 to 31/12/2017



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



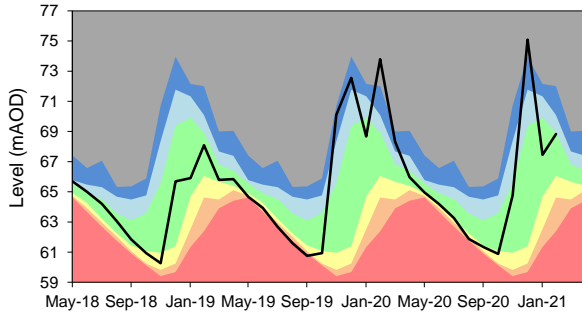
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

East Sussex – Page 2

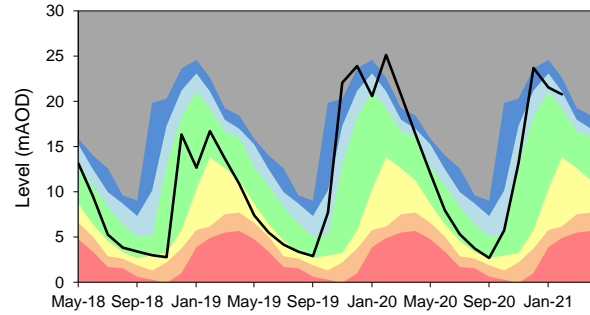
Monthly total rainfall (mm)

Long term average rainfall (mm)

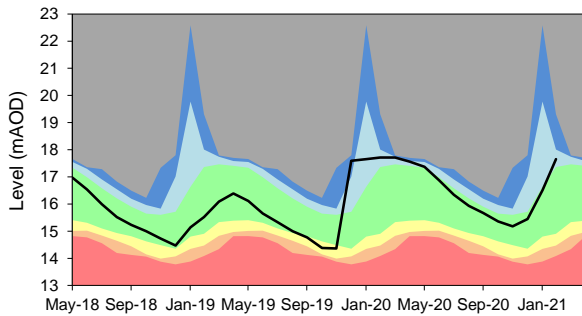
BEEDING HILL GWL - CHALK
Ranking derived from data for the period Sep-1979 to Dec-2017



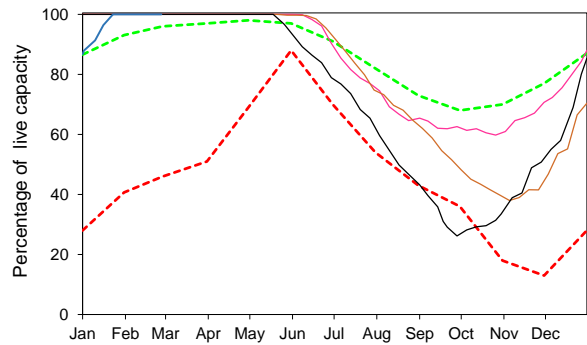
HOUNDEAN BOTTOM GWL - CHALK
Ranking derived from data for the period Jan-1977 to Dec-2017



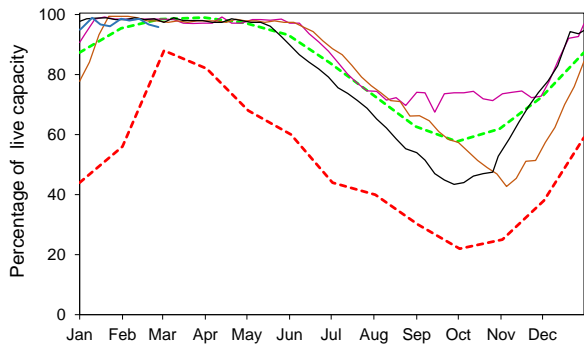
CORNISH FARM WIGDENS GWL - CHALK
Ranking derived from data for the period Mar-1981 to Dec-2017



South East Water - Ardingly Reservoir - Ouse



South East Water - Arlington Reservoir - Cuckmere



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	60	58	103	50	41	121
East Hampshire Chalk	69	62	110	59	46	129
West Sussex Chalk	69	63	110	59	47	125
East Sussex Chalk	54	57	95	46	41	114
Isle of Wight	66	60	109	56	45	124
Western Rother Greensand	74	65	115	64	50	129
Hampshire Tertiaries	69	59	117	59	44	135
Lymington	74	61	121	64	47	136
Sussex Coast	55	51	107	45	36	125
Arun	60	55	109	50	41	124
Adur	56	55	102	47	40	118
Ouse	53	56	94	46	42	108
Cuckmere	48	55	86	40	40	101
Pevensey Levels	44	54	82	37	38	96
Solent and South Downs	61	58	105	52	43	121

Winter rainfall and effective rainfall

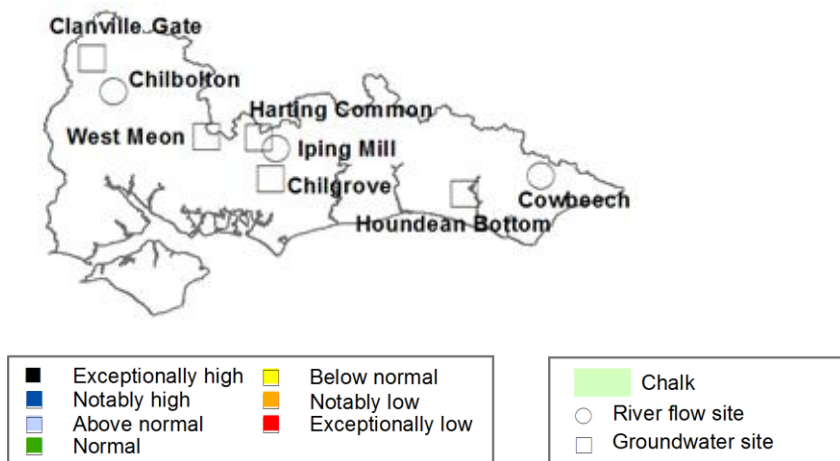
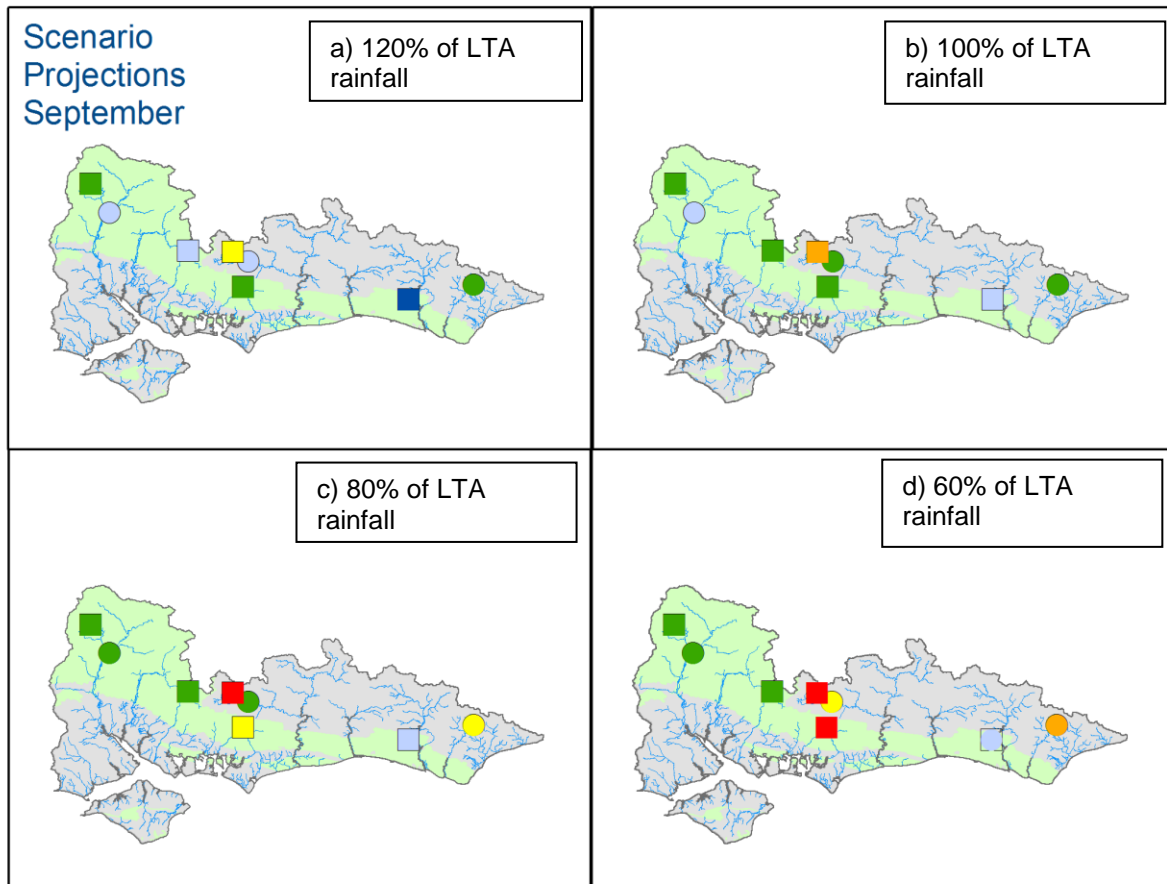
Winter totals for the period 1 October 2020 to the 28 February 2021

Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	534	387	138	379	214	177
East Hampshire Chalk	611	427	143	458	256	179
West Sussex Chalk	606	441	138	435	290	150
East Sussex Chalk	570	424	134	400	257	156
Isle of Wight	609	412	148	434	247	176
Western Rother Greensand	653	449	145	481	284	169
Hampshire Tertiaries	565	395	143	413	242	171
Lymington	613	411	149	464	264	176
Sussex Coast	480	365	132	303	202	150
Arun	553	392	141	376	253	149
Adur	535	401	133	357	251	142
Ouse	554	413	134	389	272	143
Cuckmere	550	410	134	384	257	149
Pevensey Levels	535	400	134	366	238	154
Solent and South Downs	569	409	139	403	252	160

Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	4	5
East Hampshire Chalk	4	5
West Sussex Chalk	4	4
East Sussex Chalk	6	5
Isle of Wight	4	5
Western Rother Greensand	4	4
Hampshire Tertiaries	4	5
Lymington	4	5
Sussex Coast	4	5
Arun	4	4
Adur	4	5
Ouse	5	4
Cuckmere	6	5
Pevensey Levels	6	5
Solent and South Downs	4	5

Forward look- river flow and groundwater September 2021



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

Glossary

Term

Aquifer

Areal average rainfall

Artesian

Artesian borehole

Cumecs

Effective rainfall

Flood Alert/Flood Warning

Groundwater

Long term average (LTA)

mAOD

MORECS

Naturalised flow

NCIC

Recharge

Reservoir gross capacity

Reservoir live capacity

Soil moisture deficit (SMD)

Definition

A geological formation able to store and transmit water.

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

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

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

Cubic metres per second (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