

Monthly water situation report

Solent and South Downs Area

Summary – May 2020

Solent and South Downs (SSD) had well below average rainfall for May, receiving 11% (6mm) of the long term average (LTA) (57mm). Monthly mean river flows across SSD ranged from **exceptionally low** to **normal**. End of month groundwater levels ranged from **below normal** to **notably high**. Soil moisture deficits across Solent and South Downs ended May much higher than LTAs. End of month reservoir stocks were above average at Ardingly Reservoir (Ouse Catchment) and Arlington Reservoir (Cuckmere catchment).

Rainfall

Solent and South Downs (SSD) had **exceptionally low** rainfall in across the entire area in May, receiving 11% (6mm) of the LTA (57mm). The Ouse areal unit in the east had the highest monthly total but still only 10mm, 18% of LTA (55mm), followed by neighbouring areal unit, Cuckmere, which had 17% (9mm) of LTA (52mm). The Lymington areal unit in the west of SSD received the lowest rainfall with 3mm (5% LTA), followed closely by the Test Chalk and Hampshire Tertiary areal units which both recorded 4mm (7% LTA). The highest daily totals for the month were recorded on the 23rd at World's End (Hampshire Tertiaries) recording 12.2mm on one of only two days when it rained. On average, there was only one wet day over SSD, with 20 of the 68 rain gauges recording zero for the entire month.

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs ended the month greater than the long term average; more than double for the Western Rother Greensand areal unit. Soils are much drier than normal.

River Flows

Monthly mean river flows across SSD ranged from **notably low** to **above normal**. The River Itchen at Allbrook & Highbridge was the only site recording **above normal** monthly mean flows, having the 3rd highest May monthly mean flow on record. The River Ouse at Goldbridge, the Adur at Sakeham and the Cuckmere at Cowbeech all recorded **below normal** monthly mean flows in May. **Notably Low** monthly mean flows were recorded for the Arun at Alfoldean and the Lymington at Brockenhurst, these rank as the 8th and 10th lowest May flows, respectively, on record. All other reported sites recorded normal flows.

Groundwater Levels

End of month groundwater levels ranged from **below normal** to **notably high**. Preston Candover and West Meon (East Hants Chalk) levels were **notably high**. Clanville Gate (Test Chalk), Cornish Farm (East Sussex Chalk) and Youngwoods Copse (Isle of Wight) levels were **above normal**. The only site **below normal** was Carisbrooke Castle (Isle of Wight) which is known to respond quickly. All other sites recorded **normal** groundwater levels in May. Observation boreholes Harting Common and Catherington were not dipped this month due to Covid-19 restrictions. The most notable levels this month were recorded at Preston Candover and West Meon Hut which were the 3rd and 4th highest end of May levels on record.

Reservoir Storage/Water Resource Zone Stocks

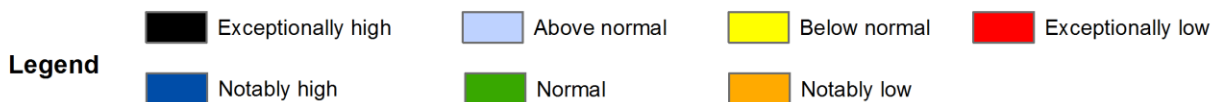
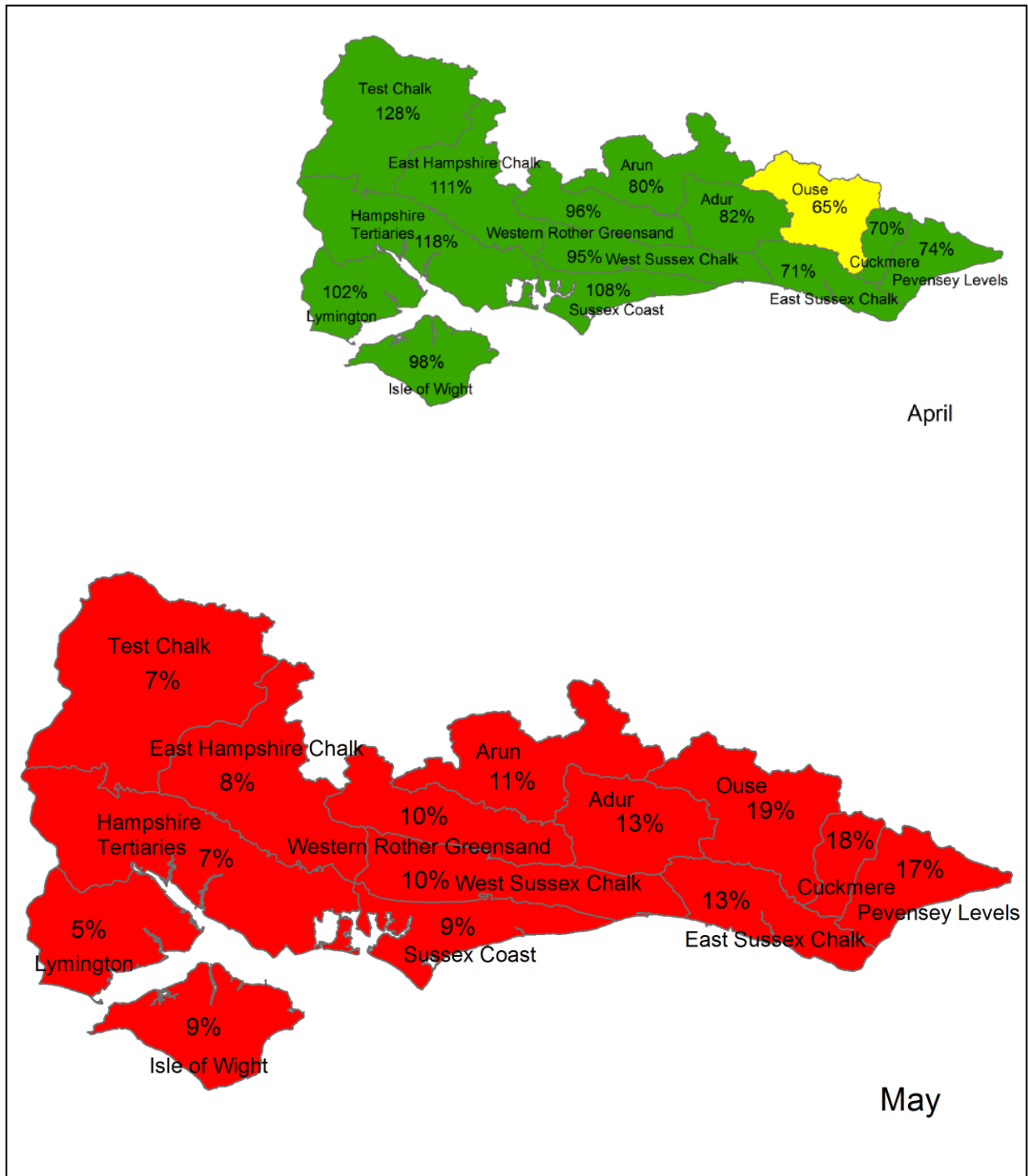
End of month reservoir stocks were above average at Ardingly Reservoir (Ouse Catchment) with 99.7% of total capacity (LTA 97%) and also above average at Arlington Reservoir (Cuckmere catchment) with 97% of total capacity (LTA 93%).

Environmental Impact

No water resources restrictions were in operation in May. No fluvial flood alerts or warning were issued in May.

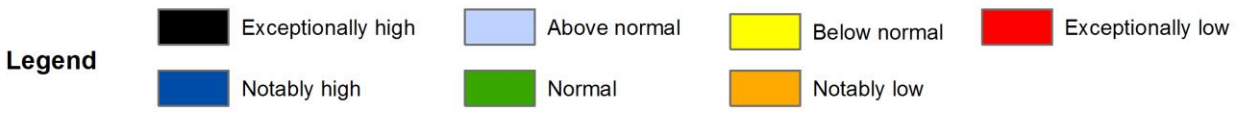
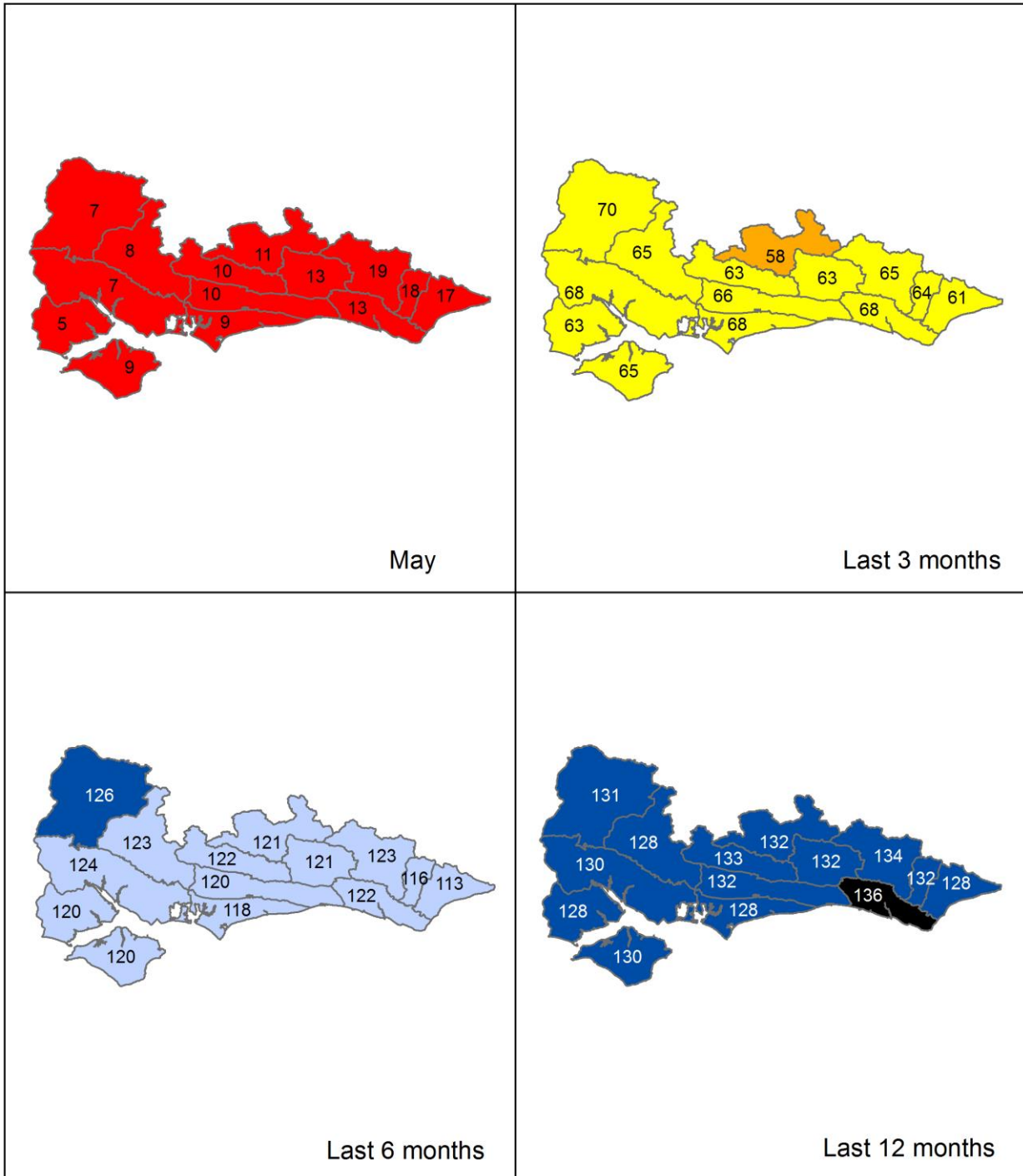
Author: [HydrologySSD](#)

Rainfall Map 1



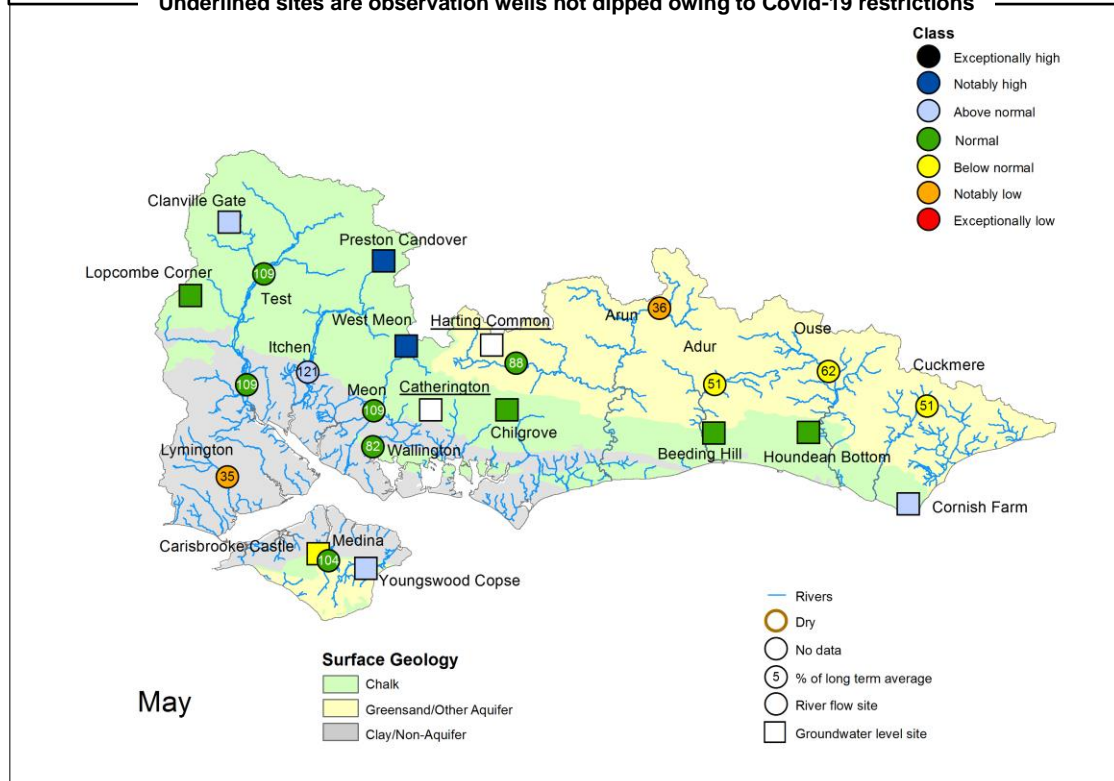
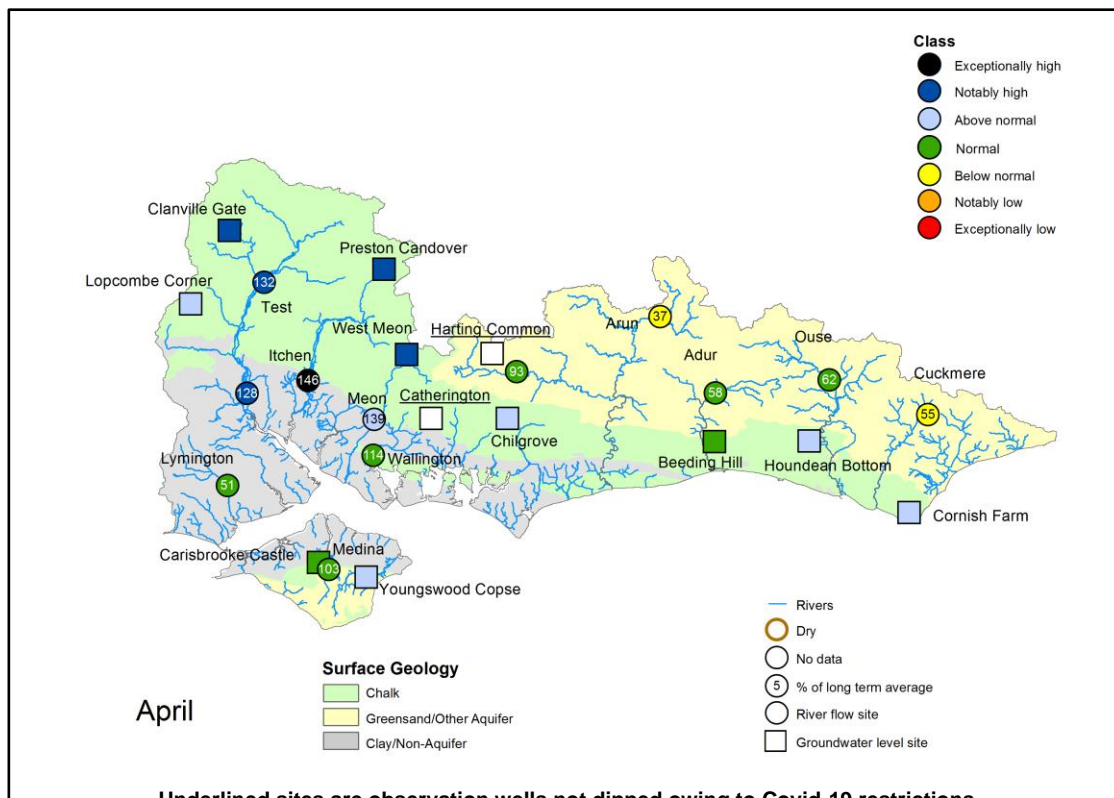
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material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

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customer service line
03708 506 506

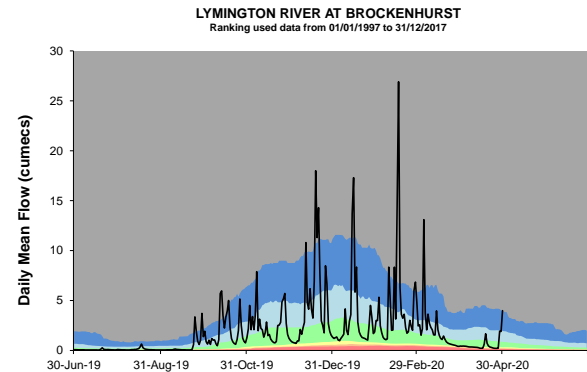
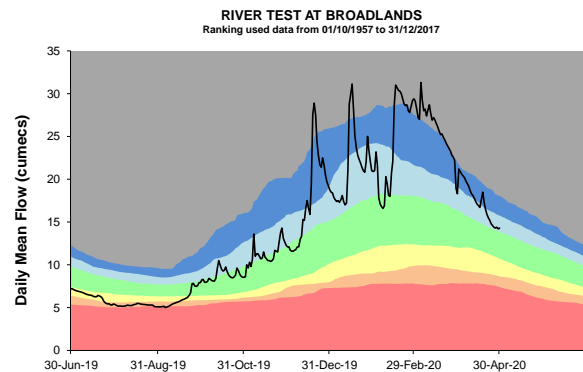
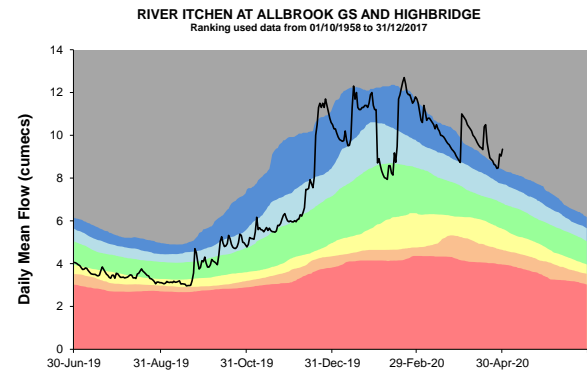
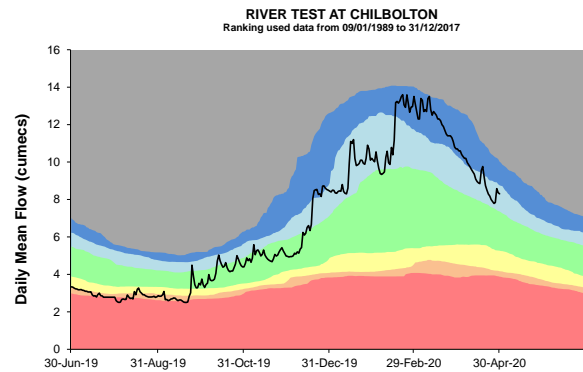
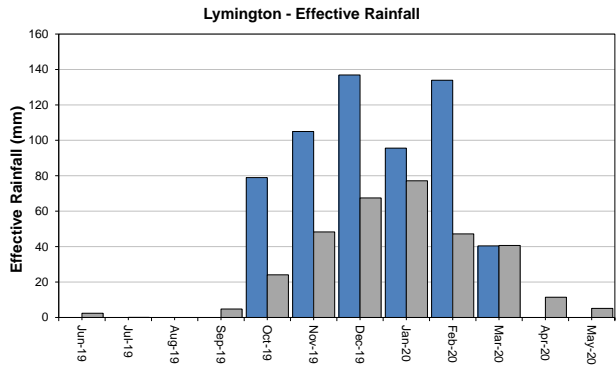
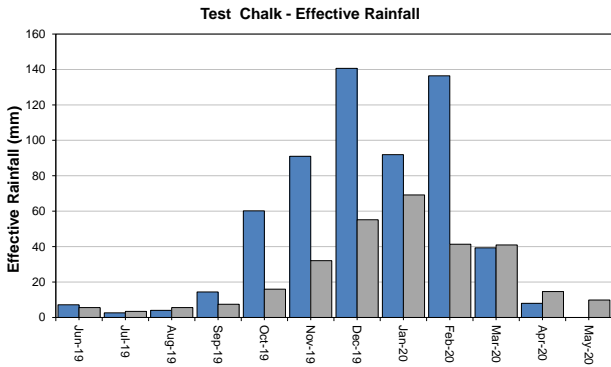
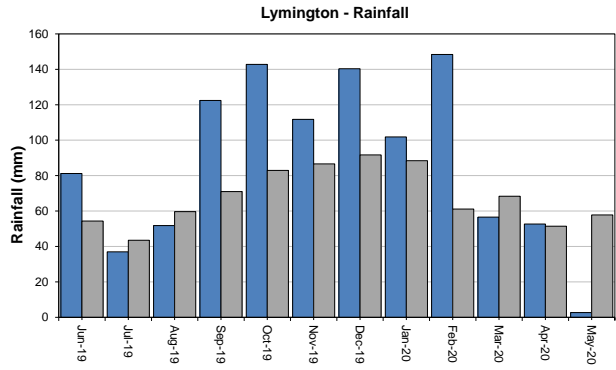
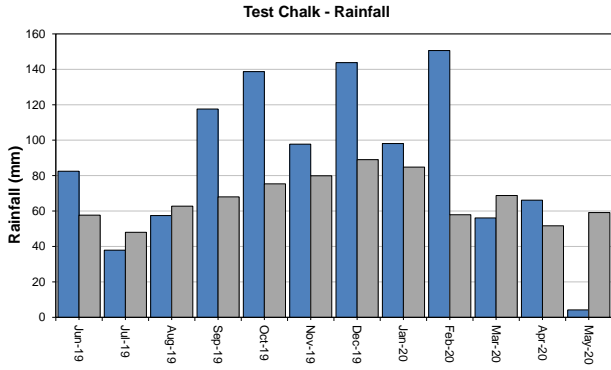
incident hotline
0800 80 70 60

floodline
0345 988 1188

West Hampshire – Page 1

Monthly total rainfall (mm)

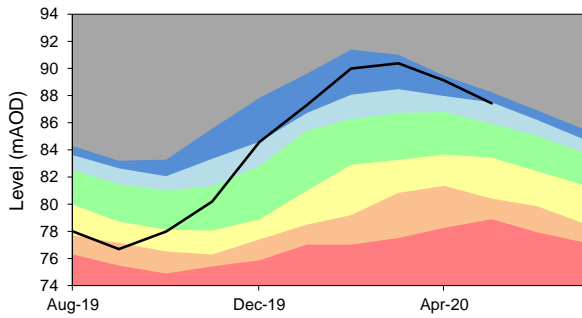
Long term average rainfall (mm)



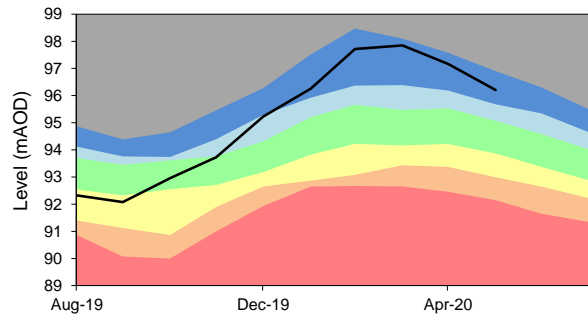
Exceptionally high
 Below normal
 Notably high
 Notably low
 Above normal
 Exceptionally low
 Normal
 Latest data

West Hampshire – Page 2

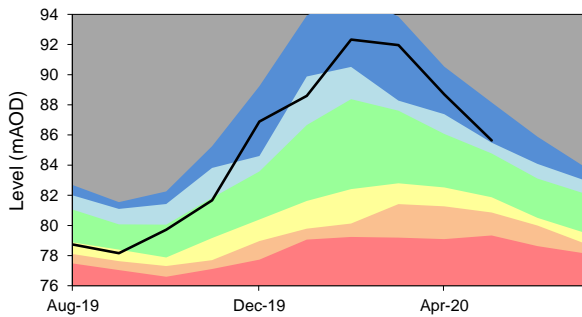
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2012



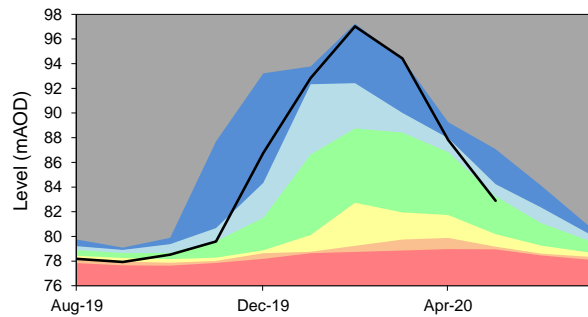
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2012



WEST MEON GWL - CHALK
 Ranking derived from data for the period Sep-1986 to Dec-2012



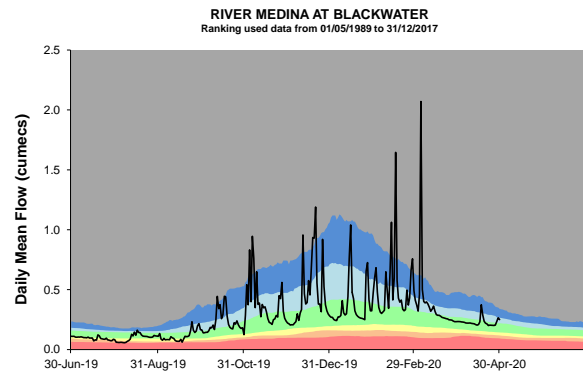
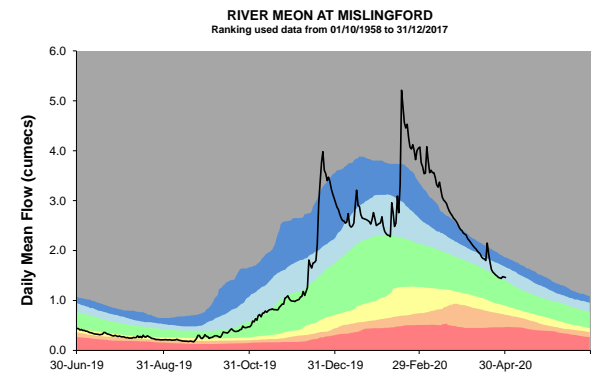
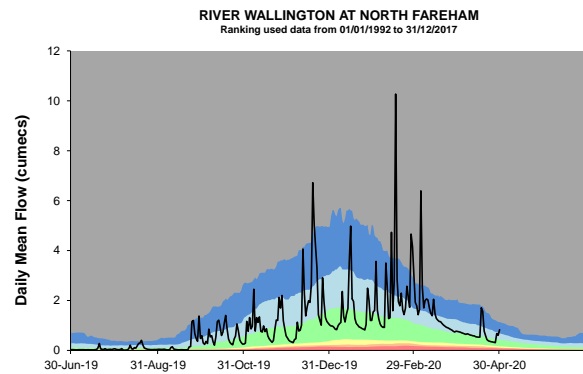
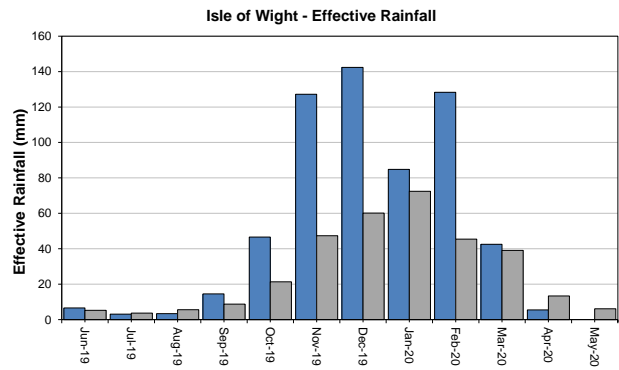
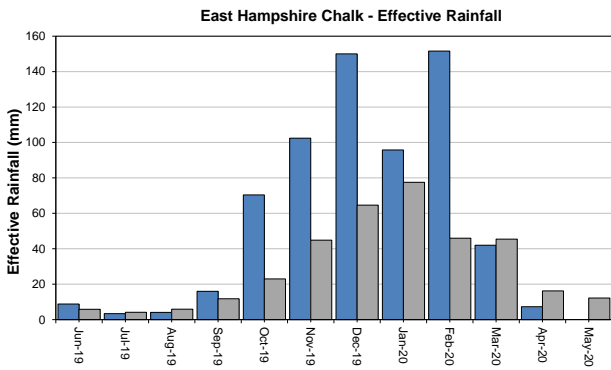
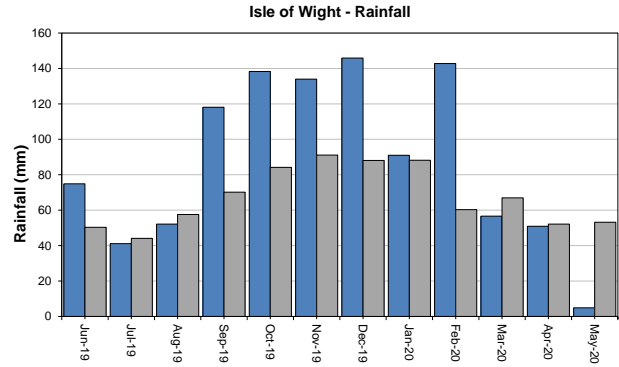
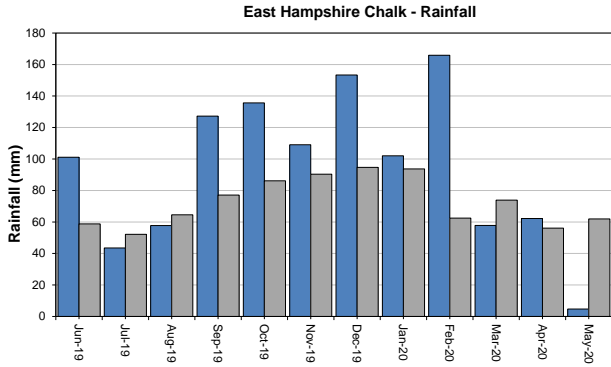
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2012



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

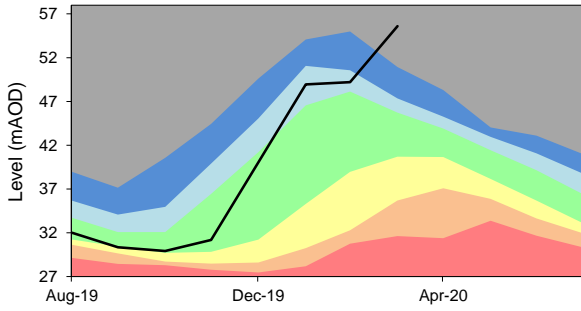
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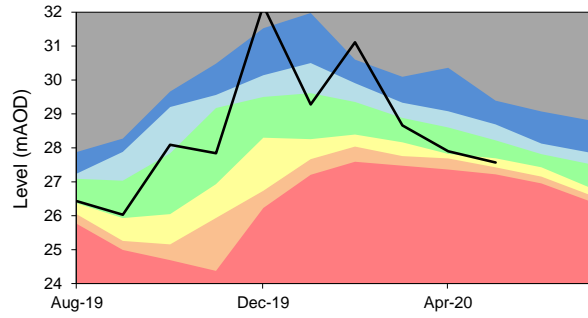
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East Hampshire and Isle of Wight – Page 2

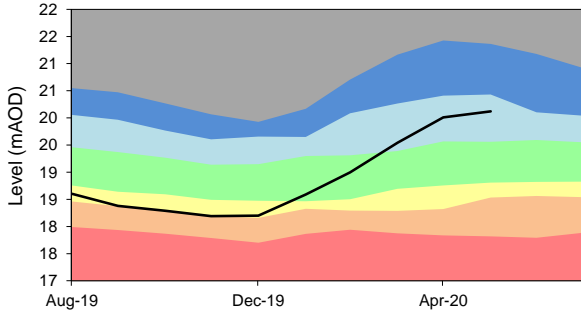
CATHERINGTON GWL - CHALK
 Ranking derived from data for the period Jan-1969 to Dec-2012



CARISBROOKE CASTLE GWL - CHALK
 Ranking derived from data for the period Aug-1977 to Dec-2012



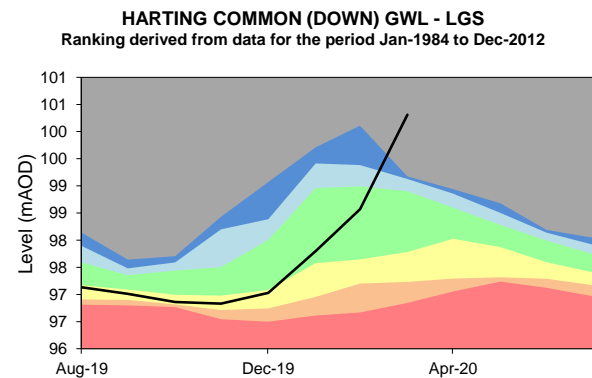
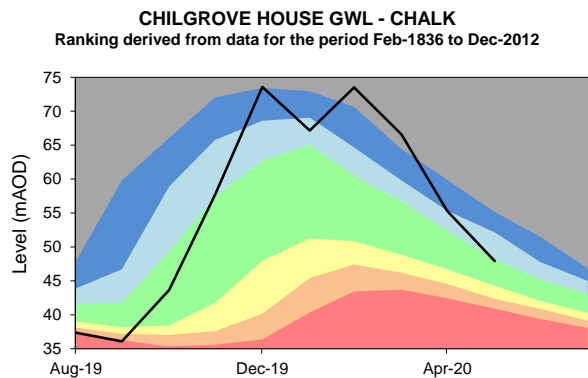
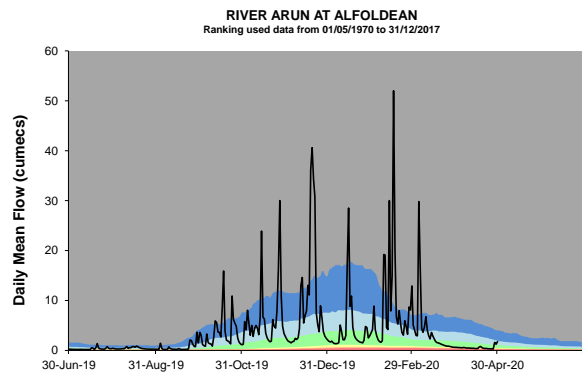
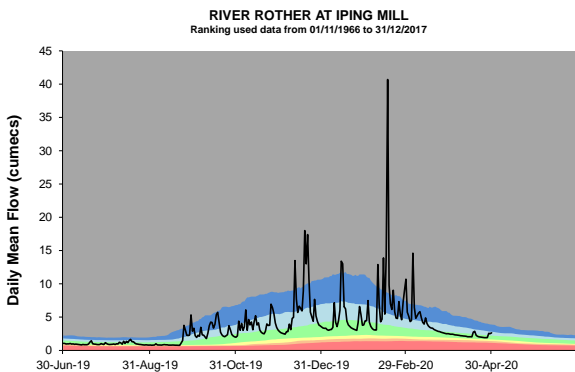
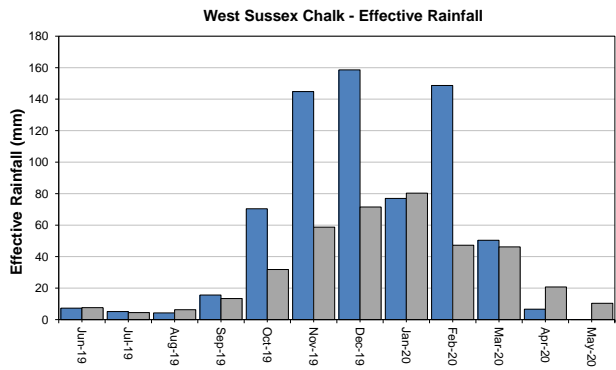
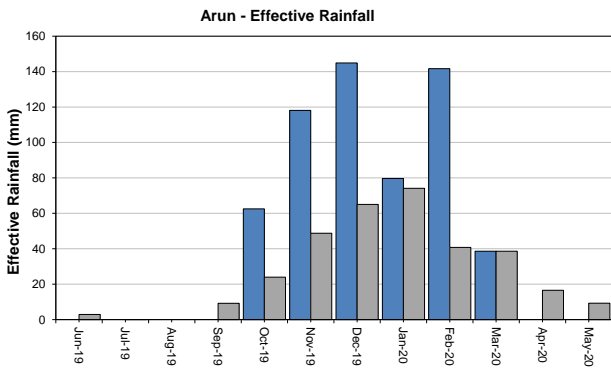
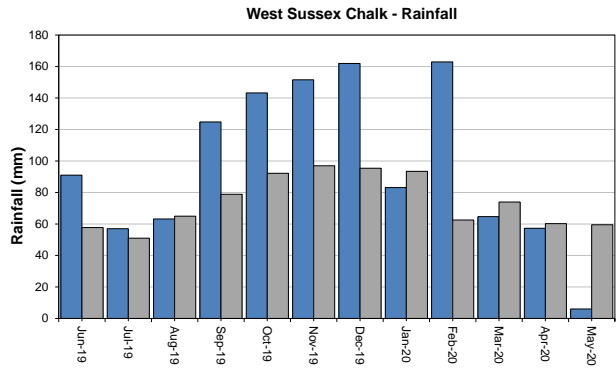
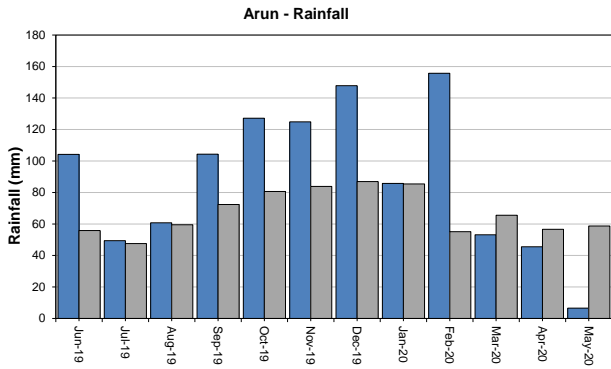
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2012



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

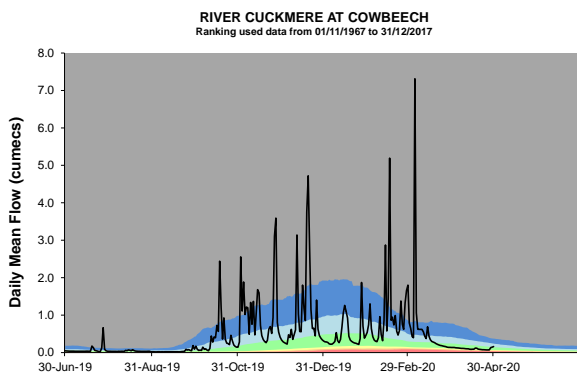
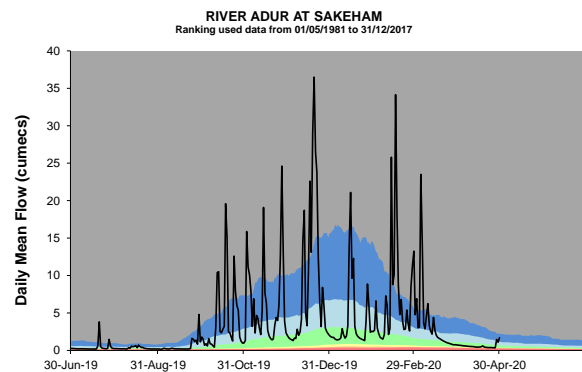
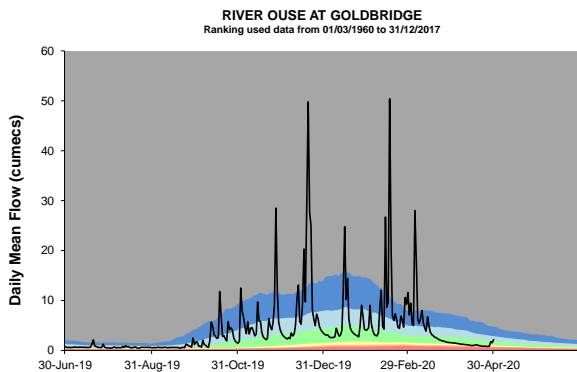
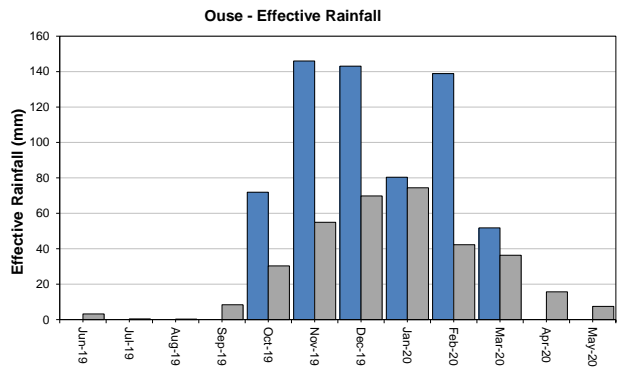
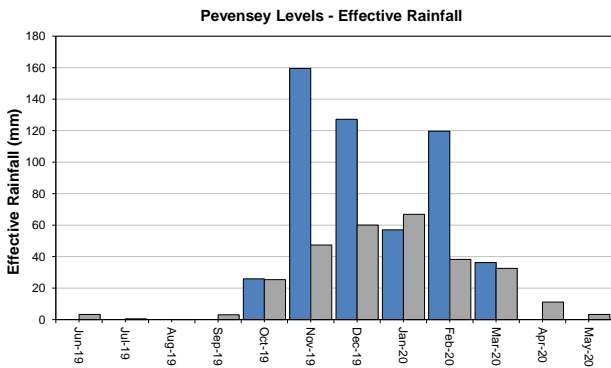
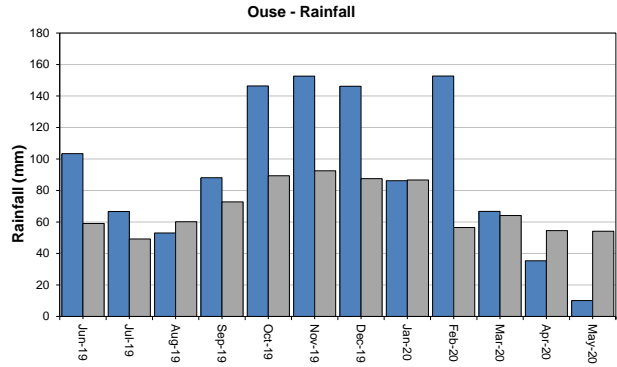
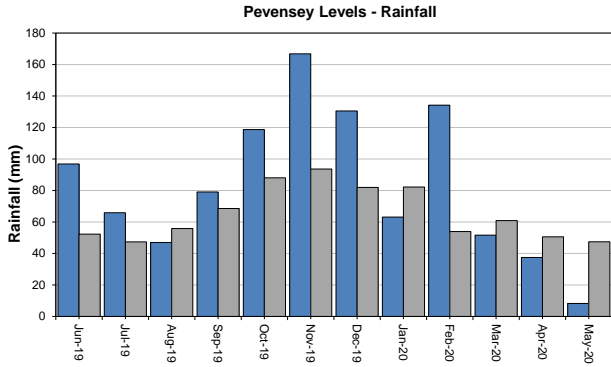
incident hotline
0800 80 70 60

floodline
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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

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03708 506 506

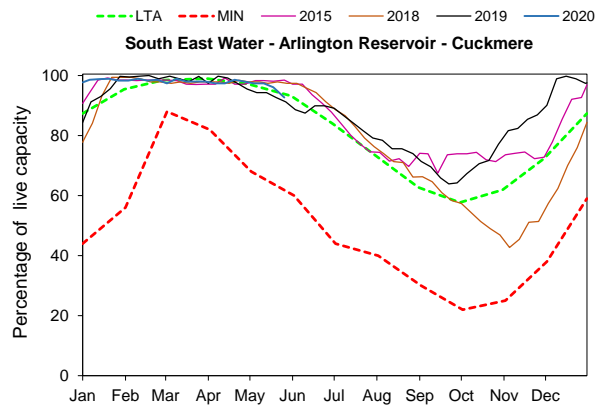
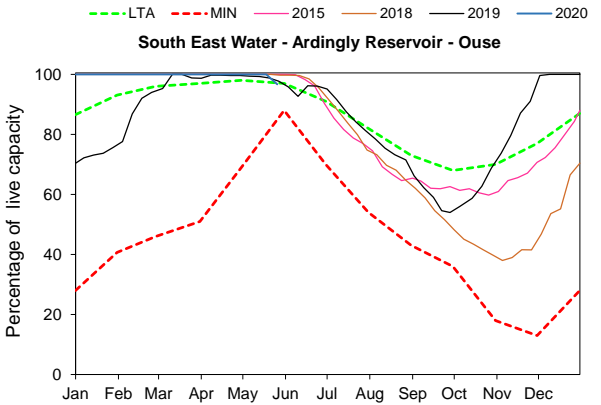
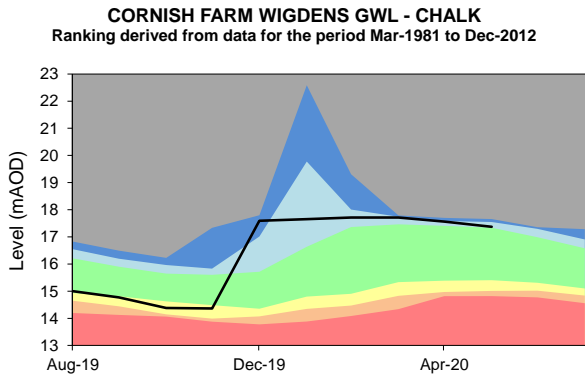
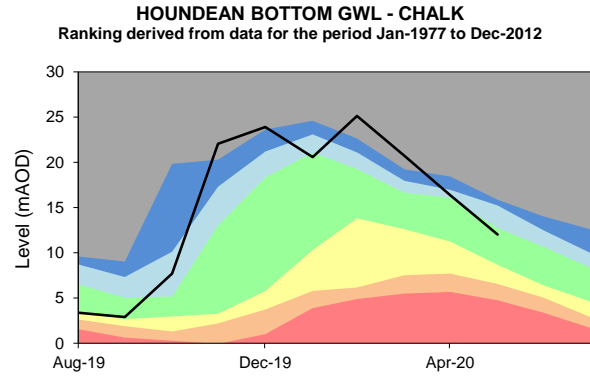
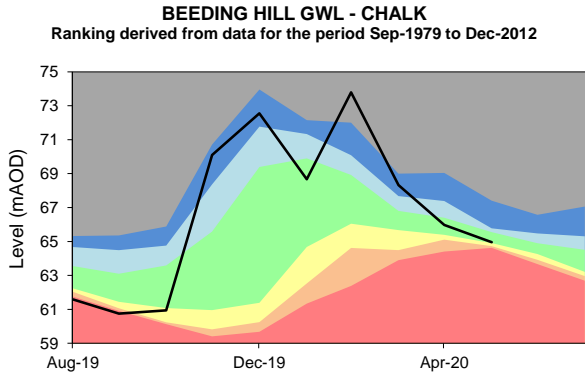
incident hotline
0800 80 70 60

floodline
0345 988 1188

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	4	60	7%	0	10	0%
East Hampshire Chalk	5	63	8%	0	12	0%
West Sussex Chalk	6	60	10%	0	10	0%
East Sussex Chalk	7	52	13%	0	7	2%
Isle of Wight	5	54	9%	0	6	0%
Western Rother Greensand	6	63	10%	0	16	1%
Hampshire Tertiaries	4	58	7%	0	5	0%
Lymington	3	59	5%	0	5	0%
Sussex Coast	5	50	9%	0	3	0%
Arun	7	60	11%	0	9	0%
Adur	7	57	13%	0	8	0%
Ouse	10	55	18%	0	7	0%
Cuckmere	9	52	17%	0	5	0%
Pevensey Levels	8	48	17%	0	3	0%
Solent and South Downs	6	57	11%	0	8	0%

Summer rainfall and effective rainfall

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

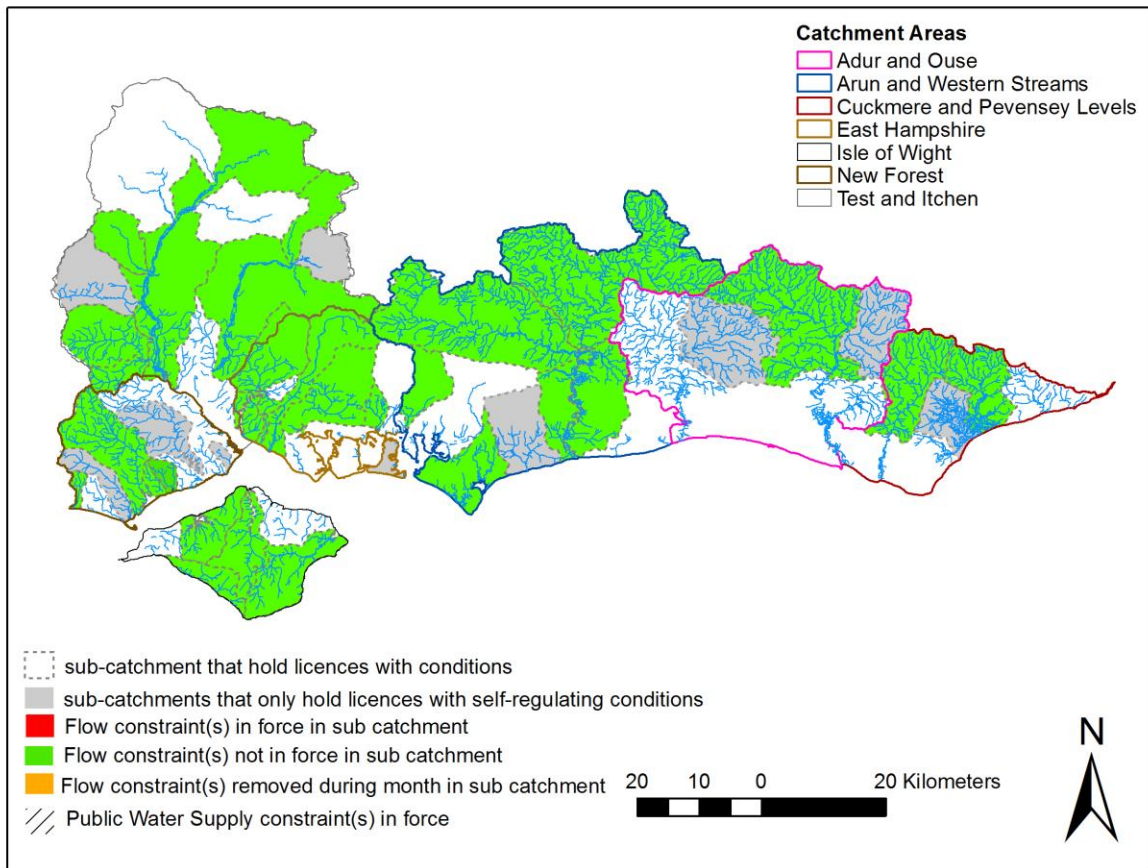
Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	70	110	64%	8	25	33%
East Hampshire Chalk	67	115	58%	7	28	26%
West Sussex Chalk	63	120	53%	7	31	21%
East Sussex Chalk	45	106	42%	4	23	18%
Isle of Wight	56	104	54%	6	19	28%
Western Rother Greensand	65	122	53%	7	40	17%
Hampshire Tertiaries	63	106	59%	0	15	0%
Lymington	55	109	51%	0	17	0%
Sussex Coast	59	100	59%	0	15	0%
Arun	52	116	45%	0	26	0%
Adur	53	112	47%	0	24	0%
Ouse	46	110	42%	0	23	0%
Cuckmere	44	104	43%	0	18	0%
Pevensey Levels	46	99	46%	0	14	0%
Solent and South Downs	56	109	51%	3	23	12%

Soil Moisture Deficit

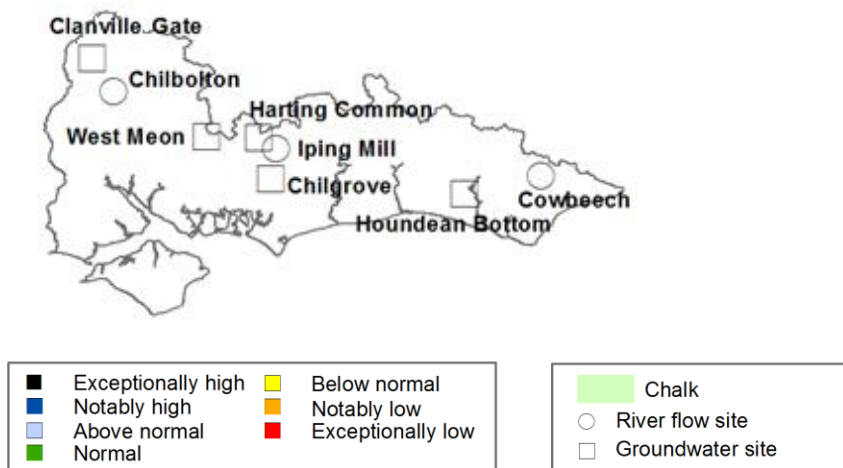
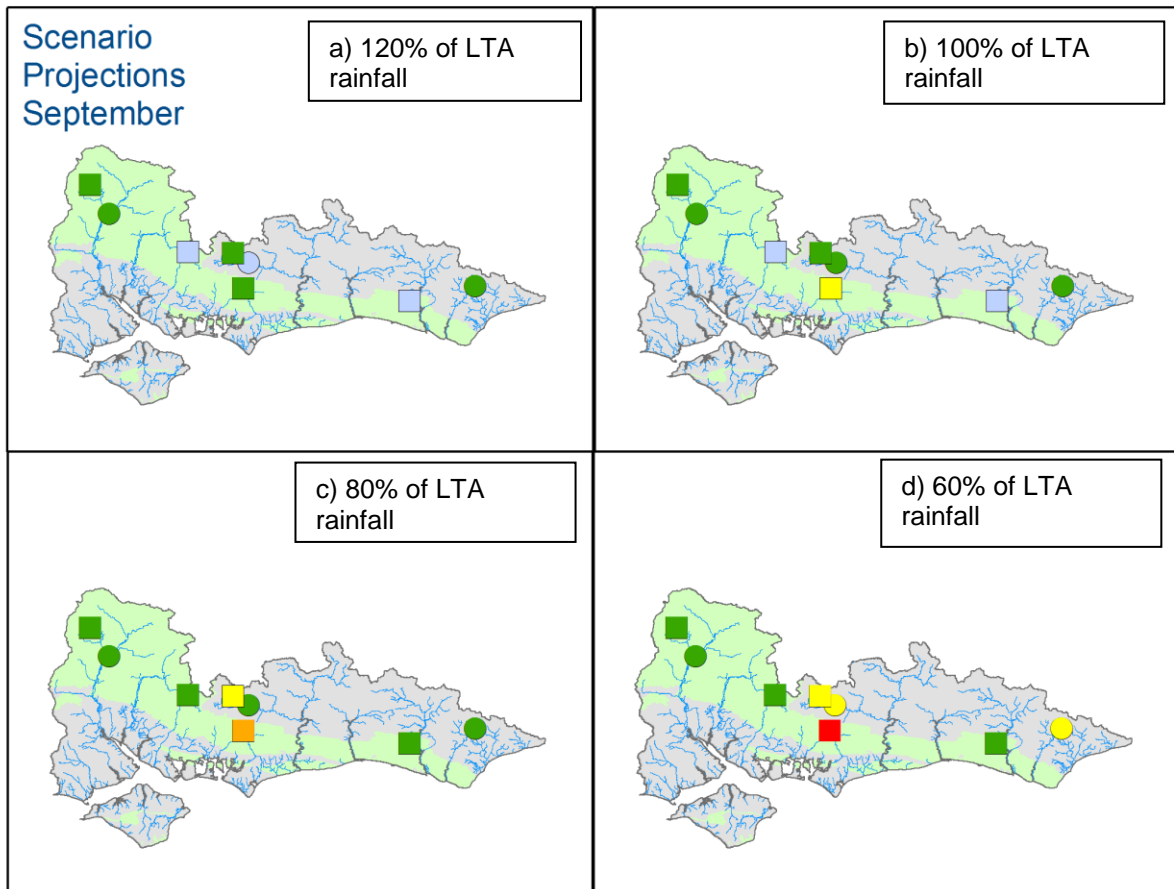
Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	84	45
East Hampshire Chalk	85	44
West Sussex Chalk	86	47
East Sussex Chalk	91	51
Isle of Wight	89	54
Western Rother Greensand	85	38
Hampshire Tertiaries	85	48
Lymington	87	47
Sussex Coast	86	51
Arun	86	46
Adur	87	47
Ouse	88	46
Cuckmere	90	49
Pevensey Levels	90	51
Solent and South Downs	87	47

Environmental Impact

Flow Constraints



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 (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