

Monthly water situation report

Solent and South Downs Area

Summary – April 2020

Solent and South Downs (SSD) had average rainfall for April, receiving 93% (50mm) of the LTA (54mm). Monthly mean river flows across SSD ranged from **below normal** to **exceptionally high**. End of month groundwater levels ranged from **normal** to **notably high**. Soil moisture deficits across Solent and South Downs end the month more than the long term average. End of month reservoir stocks were above average at Ardingly Reservoir (Ouse Catchment) with 100% of total capacity and at average at Arlington Reservoir (Cuckmere catchment) with 97% of total capacity. All groundwater alerts in force at the start of April were removed by the end of the month.

Rainfall

Solent and South Downs (SSD) had average rainfall for April, receiving 93% (50mm) of the LTA (54mm). The rainfall pattern was evenly distributed over the SSD area with slightly less to the east. The Ouse areal unit in the east had the lowest monthly total with only 35mm, 65% of LTA (55mm), followed by the neighbouring Cuckmere Unit further to the east which had 70% (34mm) of LTA (51mm). The Test Chalk unit in the west of SSD received the highest rainfall with 66mm (128% LTA), almost twice that of the Ouse unit. The highest daily totals for the month were recorded on the 17th with Eastney and Havant (Hampshire Tertiaries) recording 35mm. There were on average only 5 wet days over SSD and these were evenly spaced over the month.

Soil Moisture Deficit/Recharge

Soil moisture deficits across Solent and South Downs end the month more than the long term average.

River Flows

Monthly mean river flows across SSD ranged from **below normal** to **exceptionally high**. The River Itchen at Allbrook & Highbridge recorded monthly mean flows in the **exceptionally high** range, and had the 3rd highest April monthly mean on record. Flows on the River Test at Chilbolton GS and at Broadlands were **notably high**. The River Meon at Mislingford recorded **above normal** monthly means. Flows on River Arun at Alfoldean and Cuckmere at Cowbeech were **below normal**. All other reported sites recorded **normal** flows. The below normal flow sites are both located to the east of SSD while the exceptionally high and notably high are to the west of SSD. The River Arun at Alfoldean daily flows fell to notably low status during the middle of the month due to the lack of rainfall.

Groundwater Levels

End of month groundwater levels ranged from **normal** to **notably high**. Levels at Carisbrooke Castle (Isle of Wight) and Beeding Hill (West Sussex Chalk) were **normal**. Lopcombe Corner (Test Chalk), Chilgrove (West Sussex Chalk), Houndean Bottom, Cornish Farm (East Sussex Chalk) and Youngwoods Copse (Isle of Wight) levels were **above normal**. Clanville Gate (Test Chalk), Preston Candover and West Meon (East Hants Chalk) levels were **notably high**. Observations boreholes Harting Common and Catherington were not able to be dipped this month due to Covid-19 restrictions. The most notable levels this month were recorded at Preston Candover and West Meon Hut which recorded the 3rd highest end of April levels on record for both sites.

Reservoir Storage/Water Resource Zone Stocks

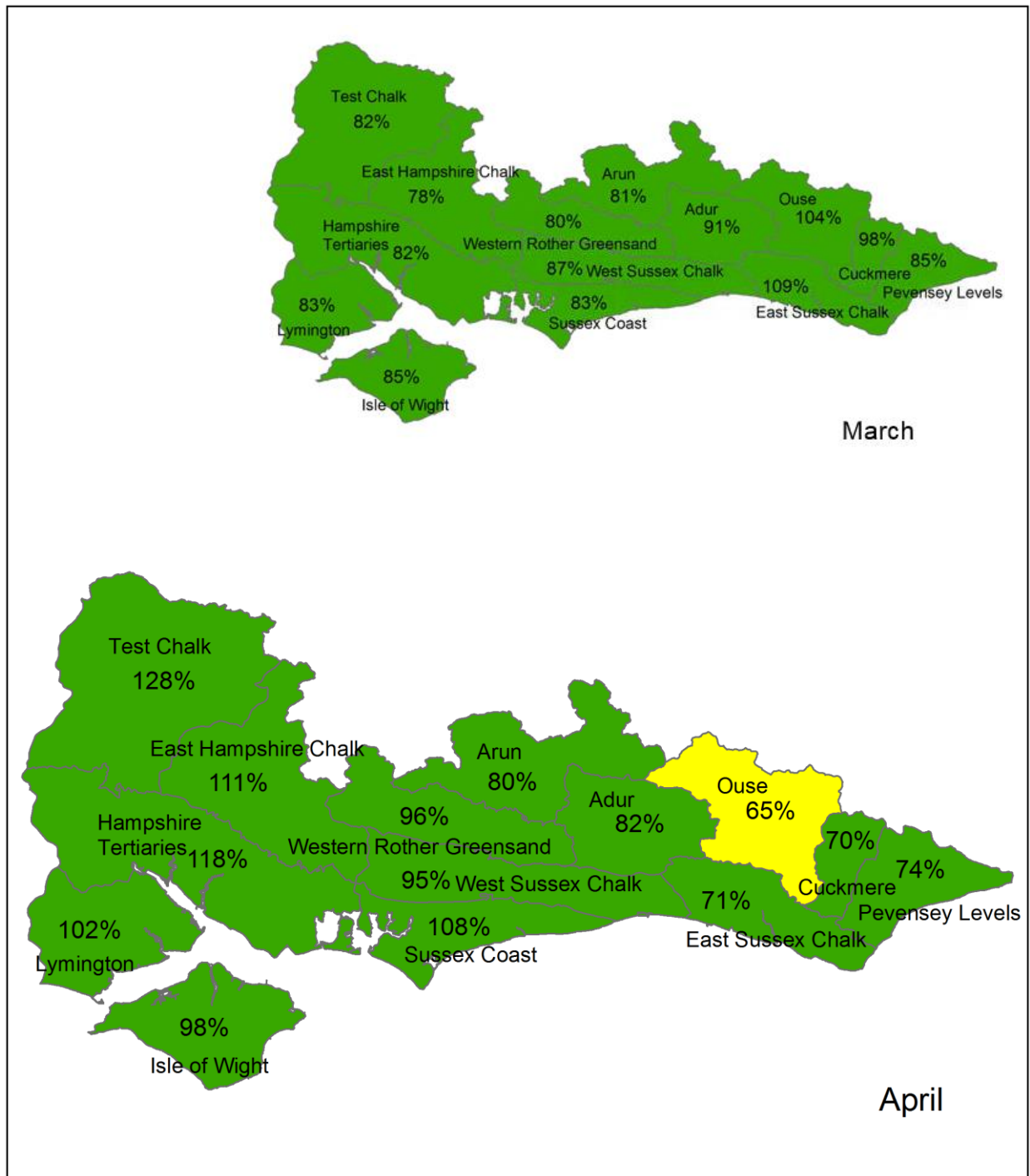
End of month reservoir stocks were above average at Ardingly Reservoir (Ouse Catchment) with 100% of total capacity (LTA is 98%) and at average at Arlington Reservoir (Cuckmere catchment) with 97% of total capacity.

Environmental Impact

No water resources restrictions were in operation in April. No fluvial flood alerts or warning were issued in April. All 8 groundwater alerts in force at the start of April were removed by the end of the month.

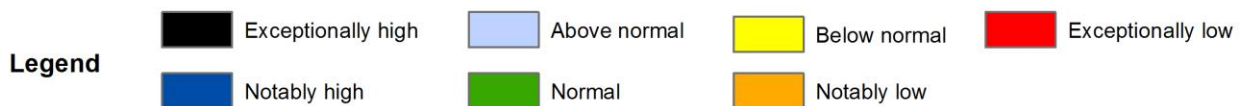
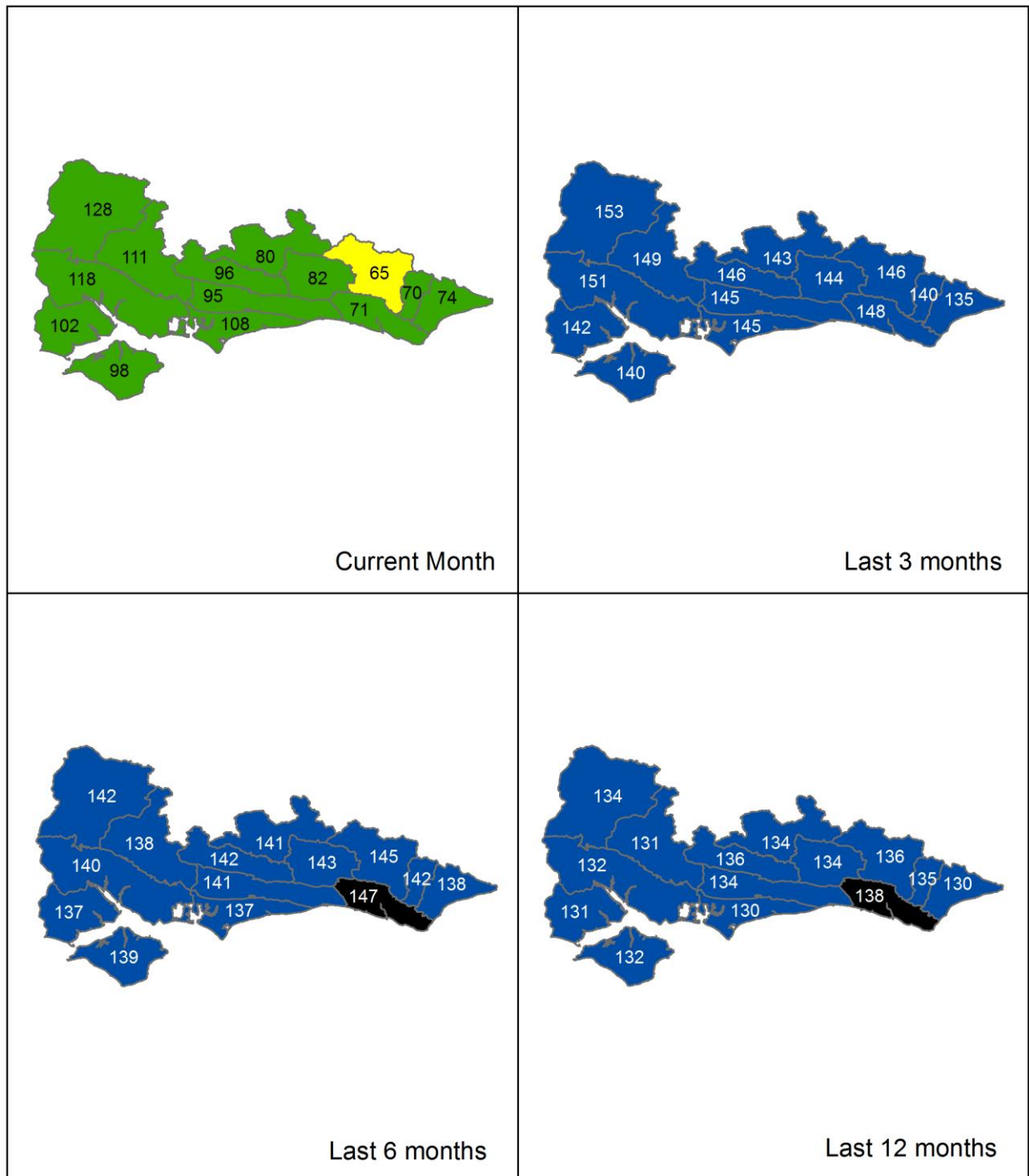
Author: [HydrologySSD](#)

Rainfall Map 1



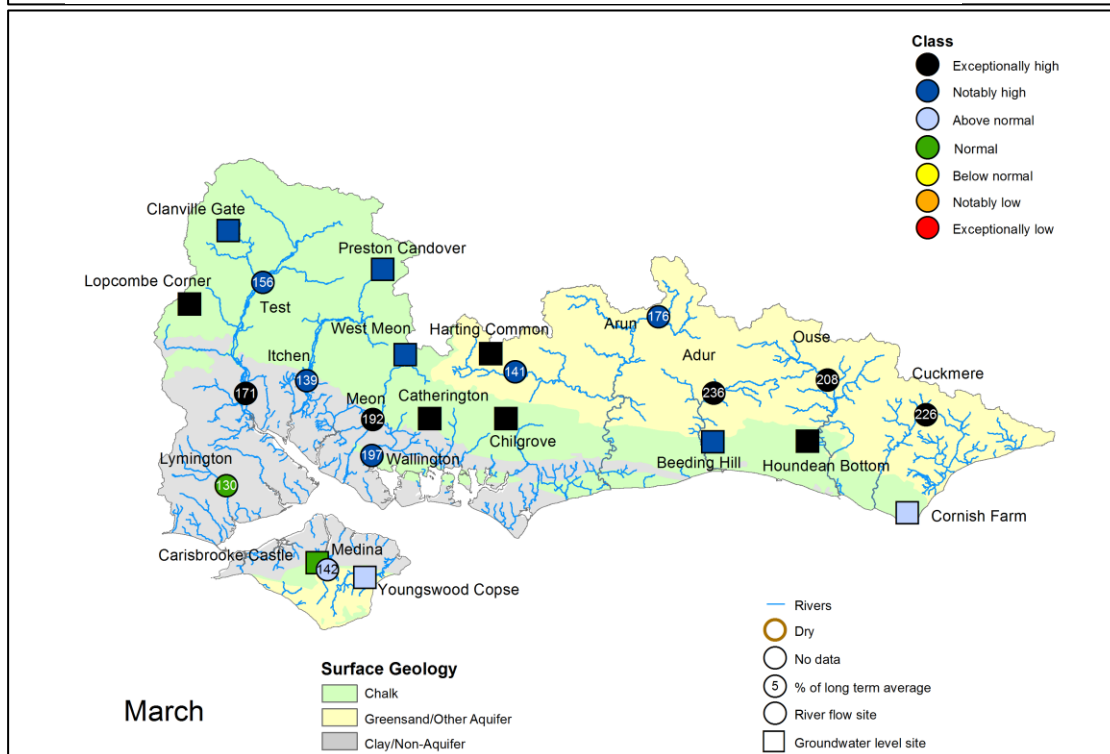
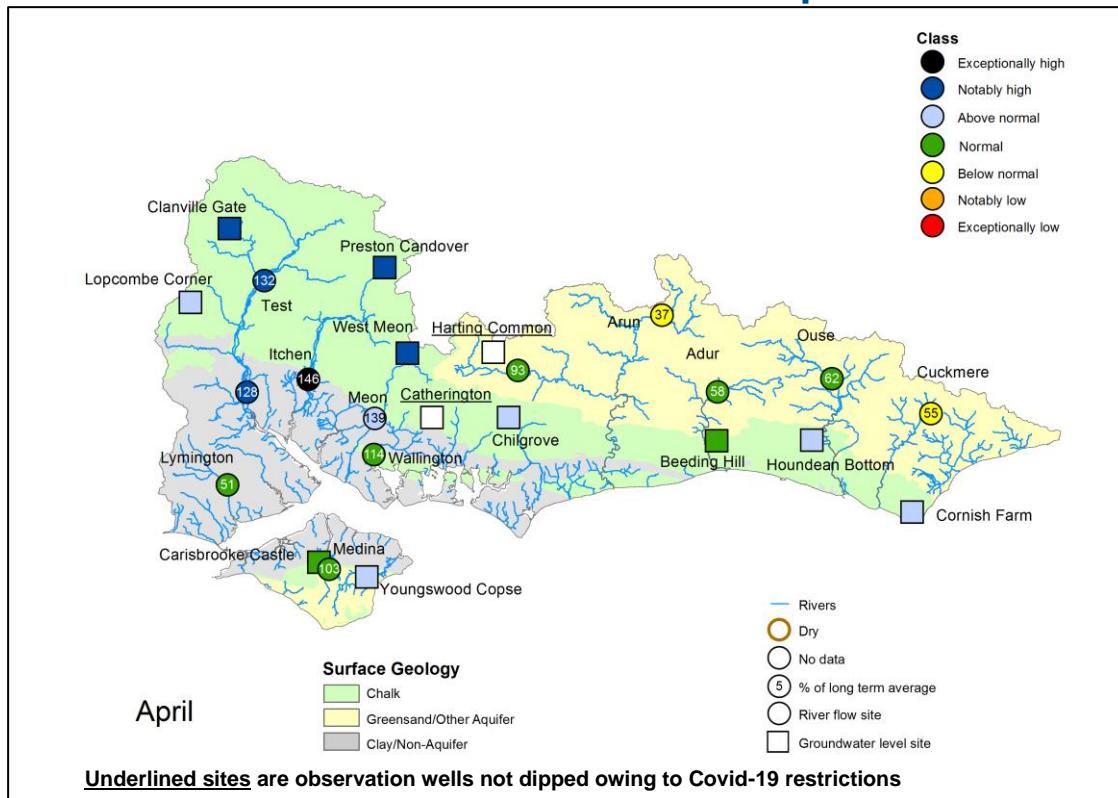
Total rainfall for hydrological areas across Solent and South Downs for the current month, classed relative to an analysis of respective historic totals. Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material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

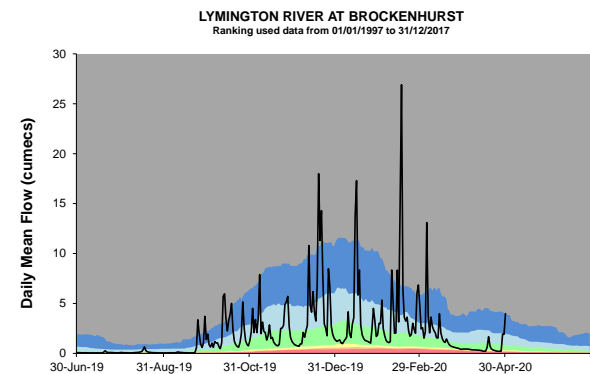
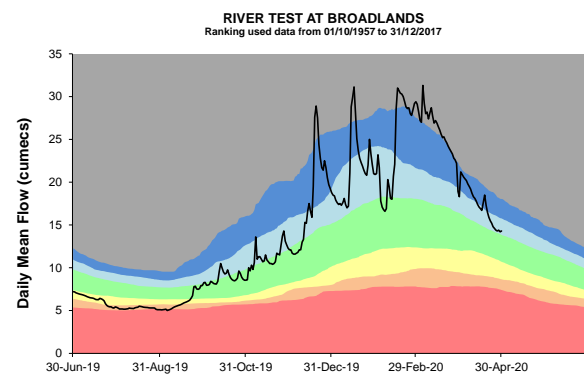
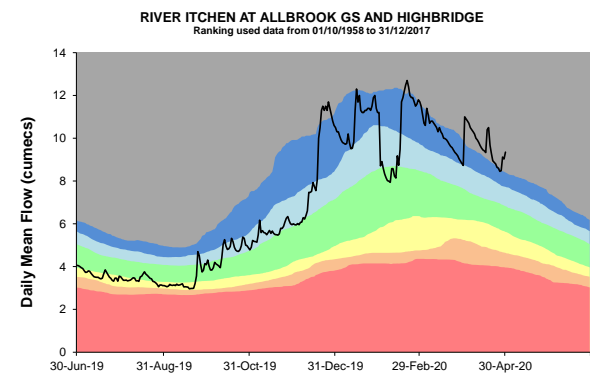
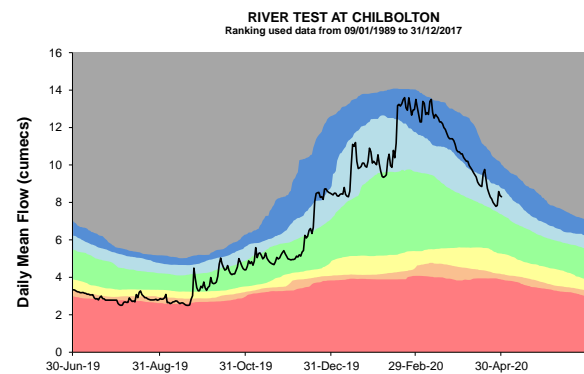
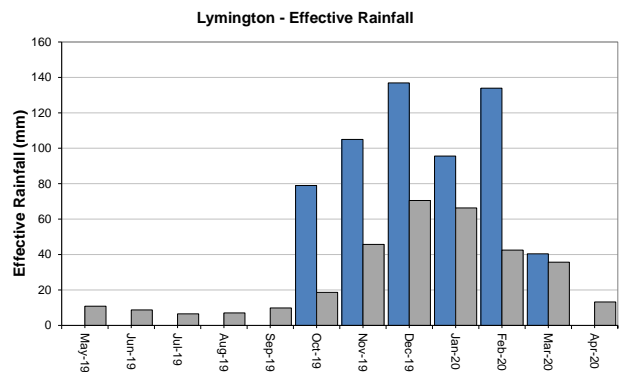
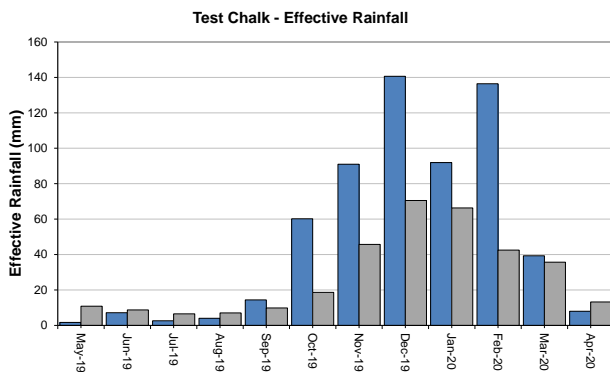
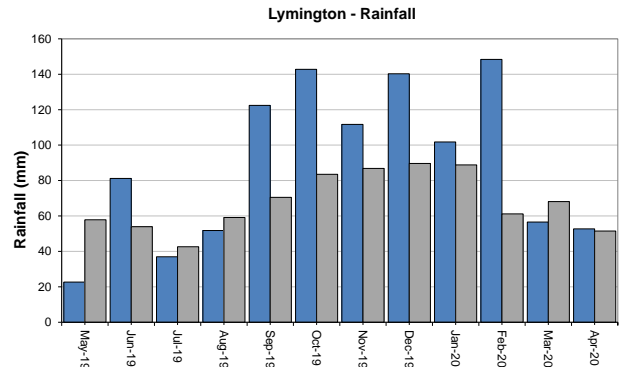
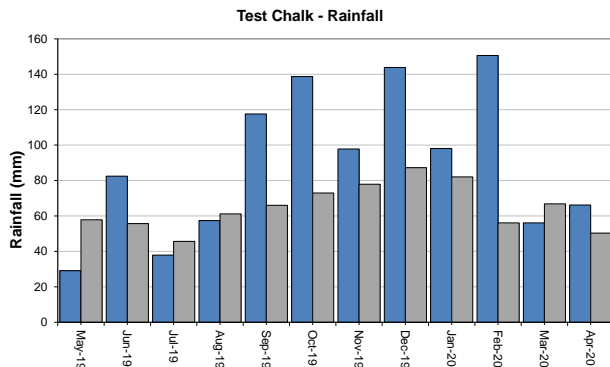
Some features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology, © CEH. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of Her Majesty's Stationery Office © Crown copyright. All rights reserved. Environment Agency, 100026380, 2020

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

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

Flow data modelled owing to current Covid-19 restrictions

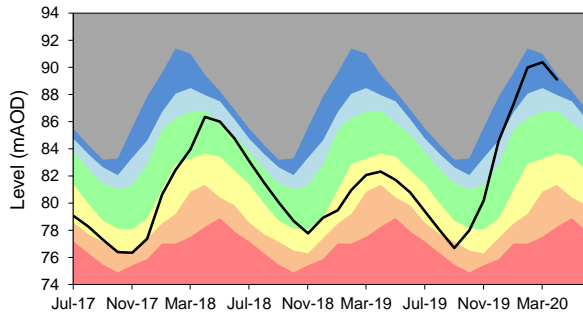
customer service line
03708 506 506

incident hotline
0800 80 70 60

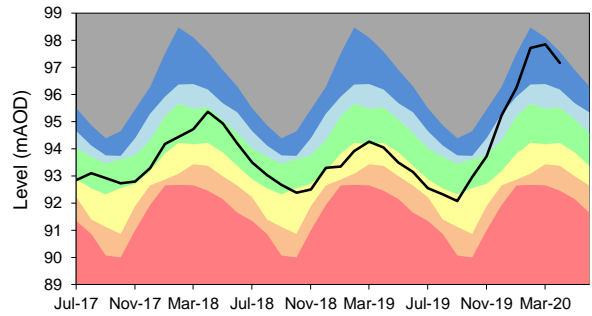
floodline
0345 988 1188

West Hampshire – Page 2

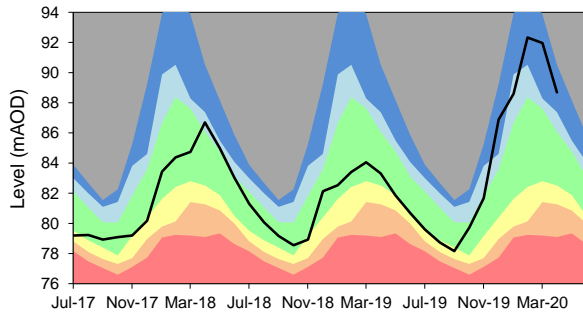
CLANVILLE GATE GWL - CHALK
 Ranking derived from data for the period Mar-1963 to Dec-2012



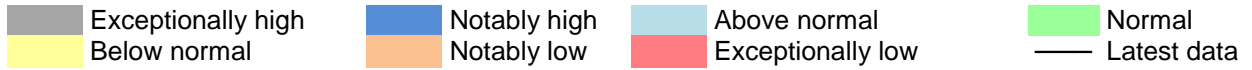
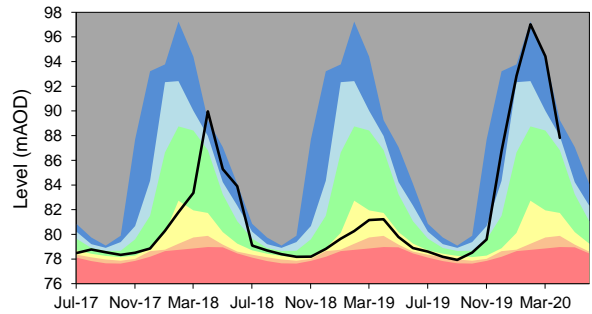
PRESTON CANDOVER GWL - CHALK
 Ranking derived from data for the period Jan-1975 to Dec-2012



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



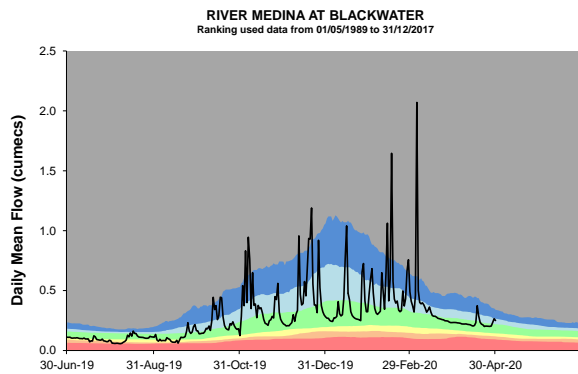
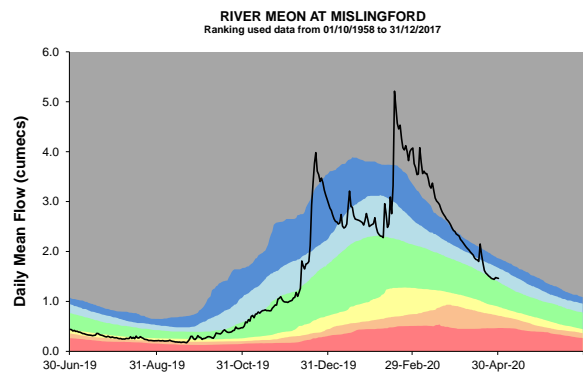
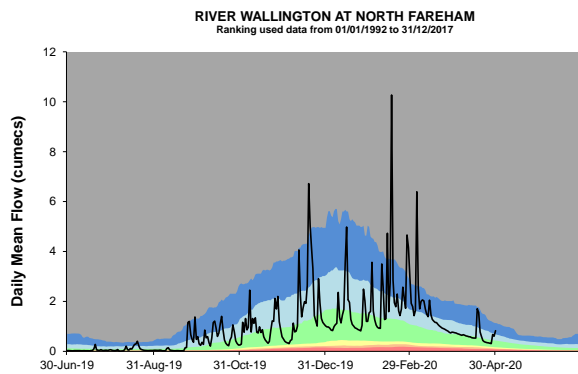
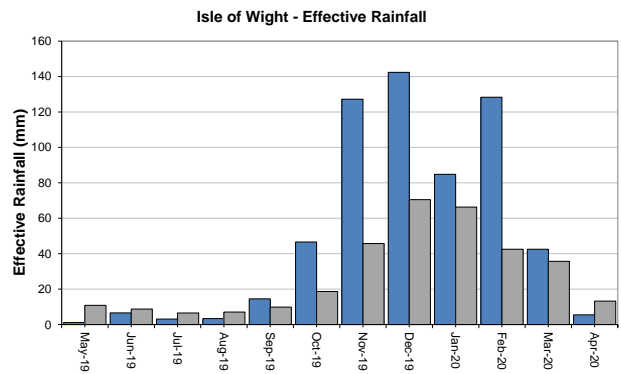
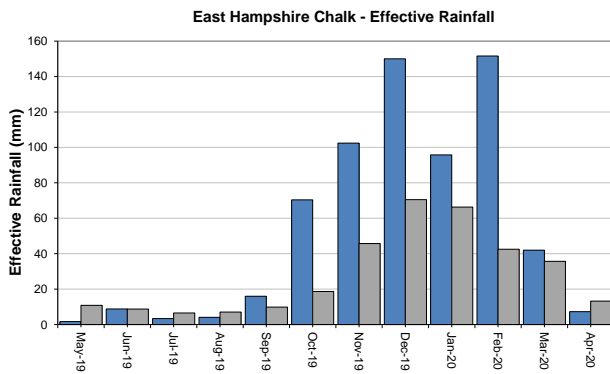
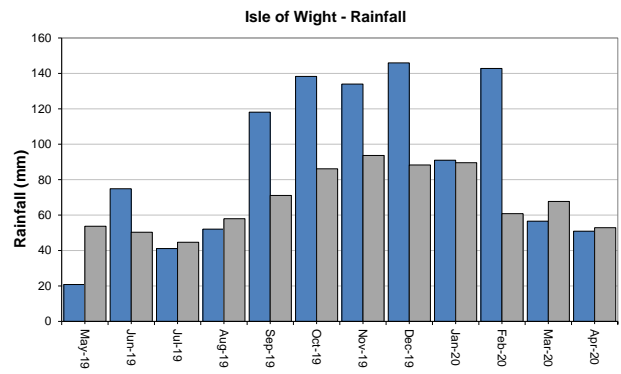
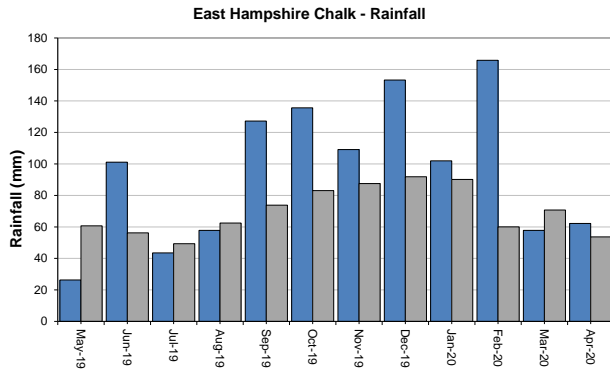
LOPCOMBE CORNER GWL - CHALK
 Ranking derived from data for the period Apr-1963 to Dec-2012



East Hampshire and Isle of Wight

Monthly total rainfall (mm)

Long term average rainfall (mm)



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

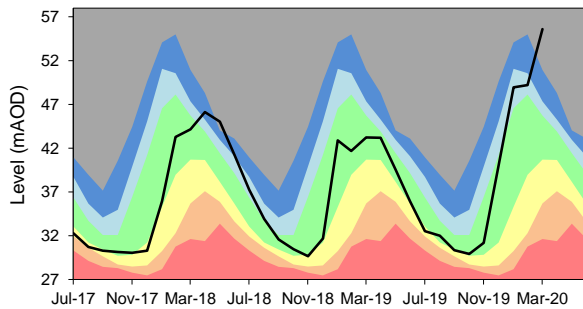
customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
0345 988 1188

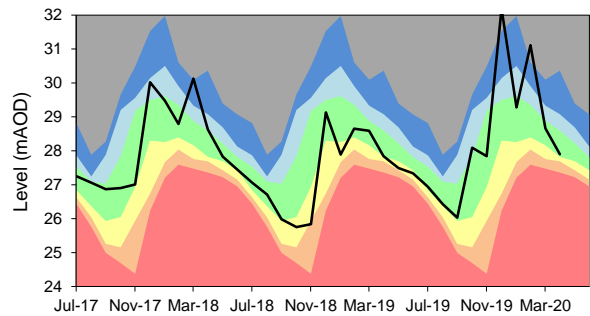
East Hampshire and Isle of Wight – Page 2

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

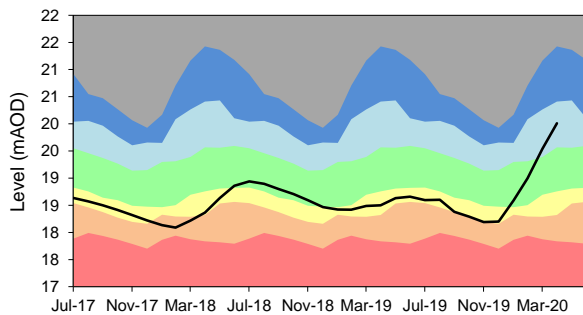


Observation well not dipped owing to Covid-19 restrictions

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



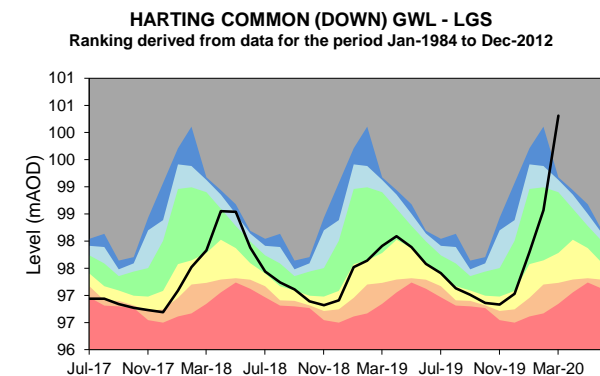
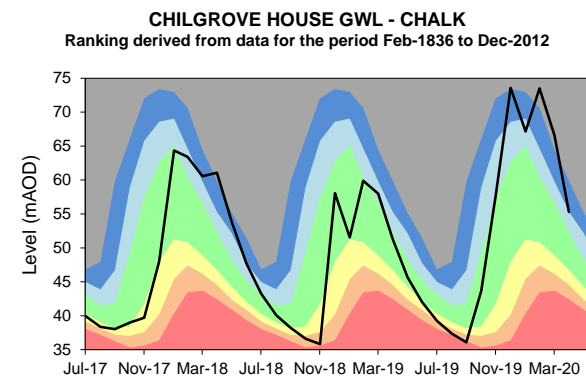
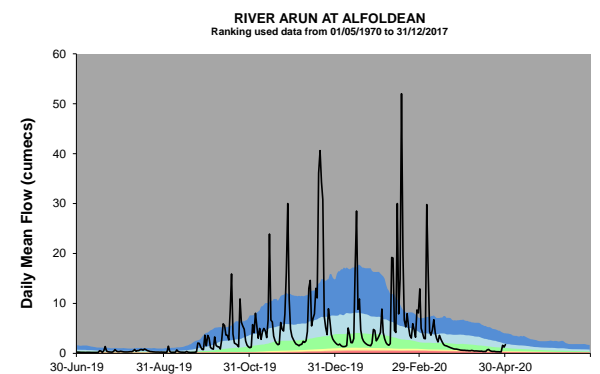
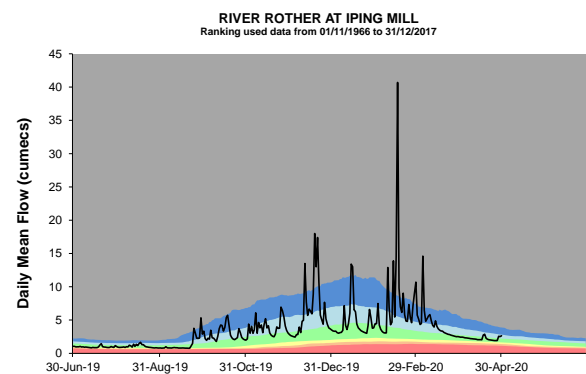
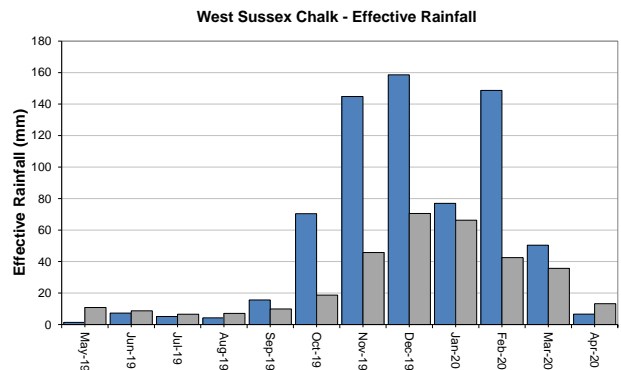
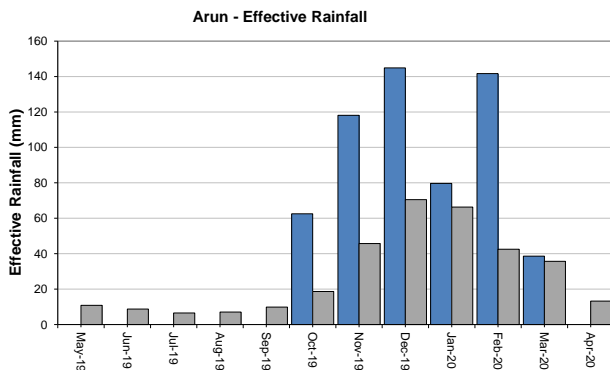
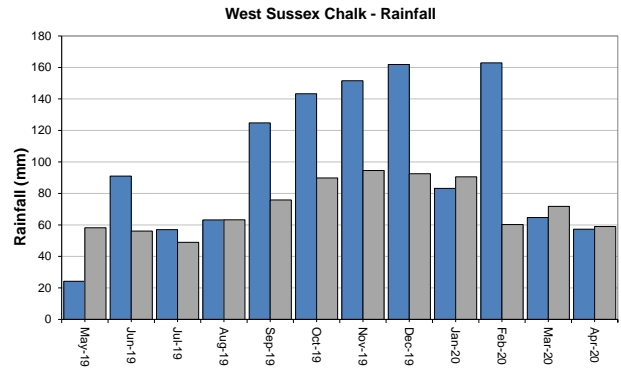
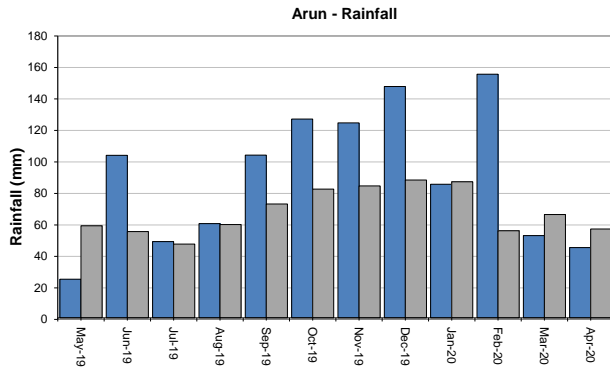
YOUNGWOOD COPSE GWL - LGS
 Ranking derived from data for the period Feb-1978 to Dec-2012



West Sussex

Monthly total rainfall (mm)

Long term average rainfall (mm)



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

customer service line
03708 506 506

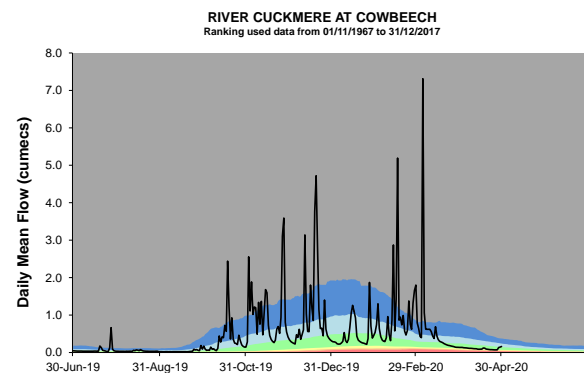
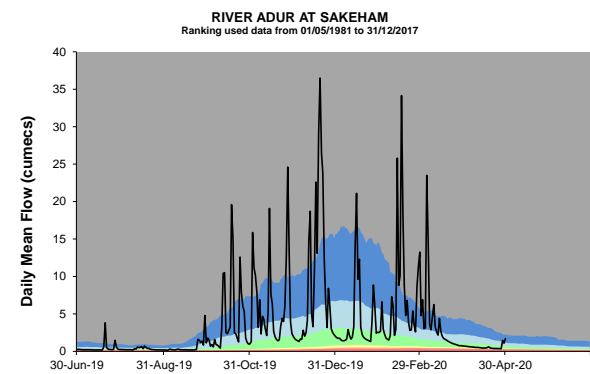
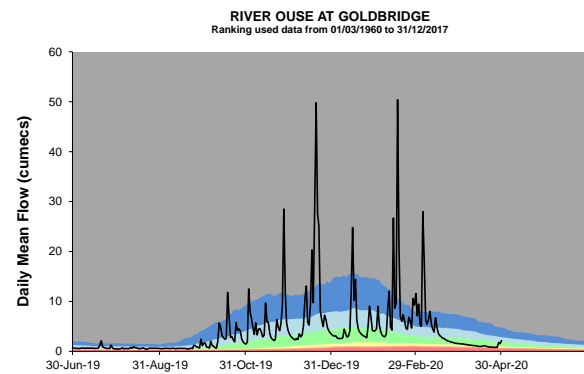
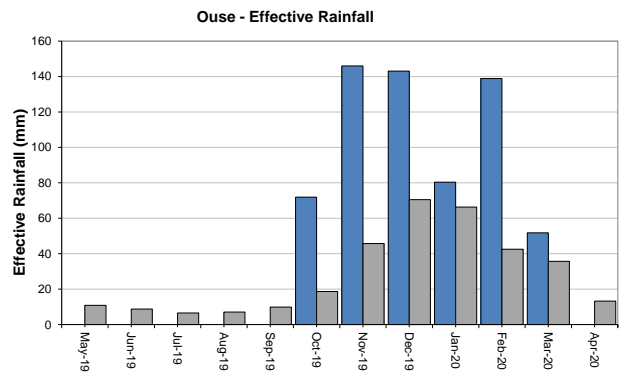
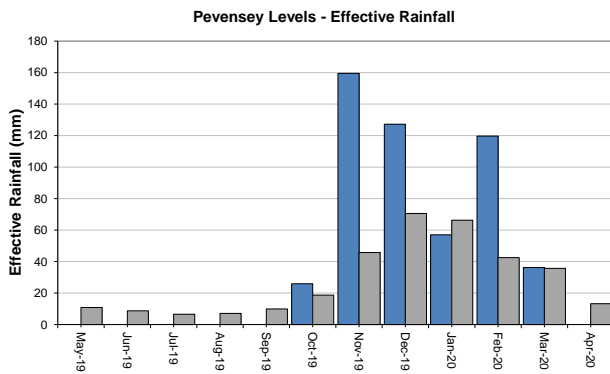
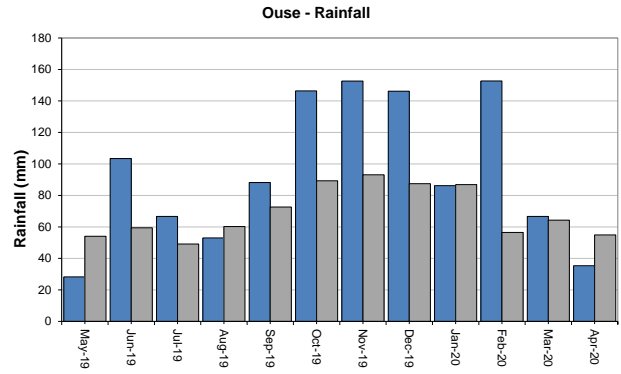
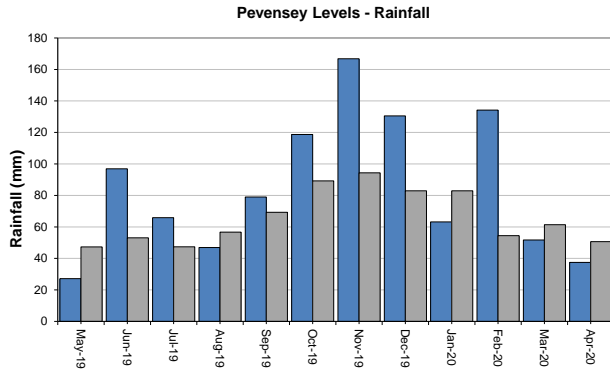
incident hotline
0800 80 70 60

floodline
0345 988 1188

East 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

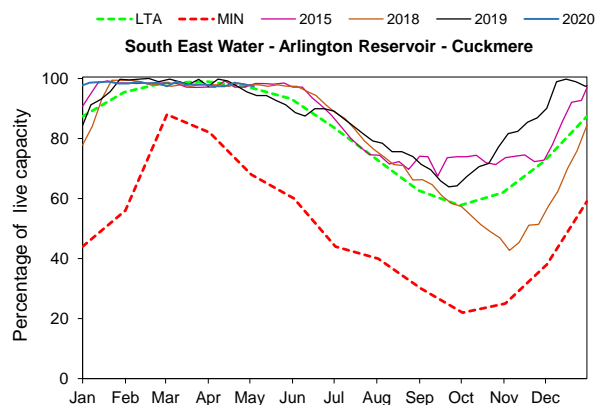
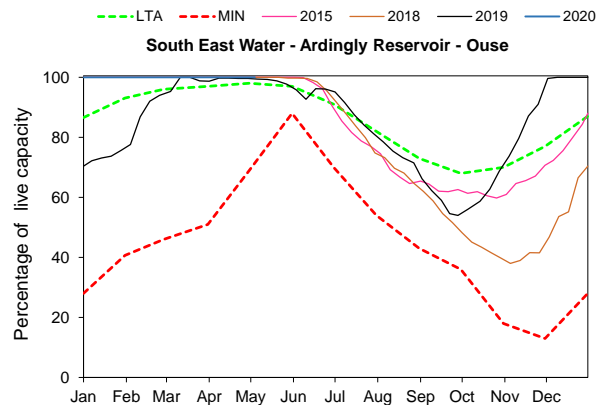
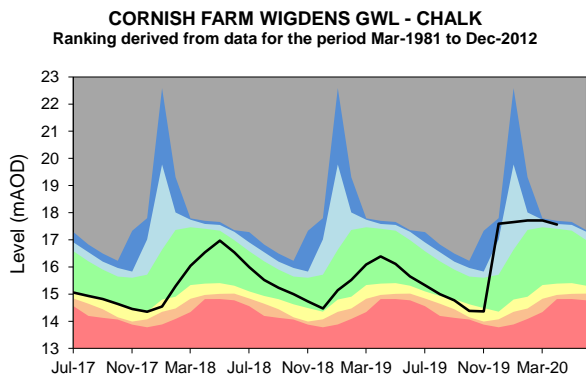
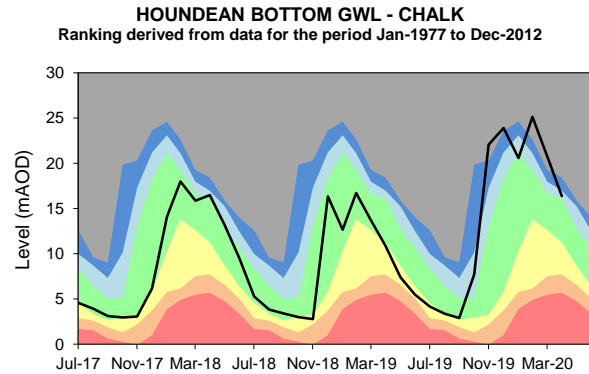
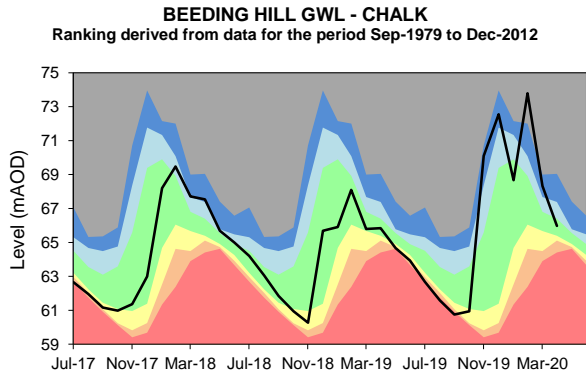
incident hotline
0800 80 70 60

floodline
0345 988 1188

East Sussex – 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	66	52	128	8	15	54
East Hampshire Chalk	62	56	111	7	16	45
West Sussex Chalk	57	60	95	7	21	32
East Sussex Chalk	38	54	71	4	16	25
Isle of Wight	51	52	98	6	13	41
Western Rother Greensand	58	61	96	7	24	28
Hampshire Tertiaries	59	50	118	0	10	0
Lymington	53	51	102	0	11	0
Sussex Coast	54	50	108	0	12	0
Arun	46	57	80	0	17	0
Adur	46	55	82	0	16	0
Ouse	35	55	65	0	16	0
Cuckmere	36	51	70	0	13	0
Pevensey Levels	38	51	74	0	11	0
Solent and South Downs	50	54	93	3	15	18

Summer rainfall and effective rainfall

Summer totals for the period 1 April to the 30 April 2020

Area	Rainfall (mm)	LTA rainfall (mm)	% of LTA	Effective rainfall (mm)	LTA effective rainfall (mm)	% of LTA
Test Chalk	66	52	128	8	15	55
East Hampshire Chalk	62	56	111	7	16	45
West Sussex Chalk	57	60	95	7	21	32
East Sussex Chalk	38	54	71	4	16	25
Isle of Wight	51	52	98	6	13	41
Western Rother Greensand	58	61	96	7	24	29
Hampshire Tertiaries	59	50	118	0	10	0
Lymington	53	51	102	0	11	0
Sussex Coast	54	50	108	0	12	0
Arun	46	57	81	0	17	0
Adur	46	55	82	0	16	0
Ouse	35	55	65	0	16	0
Cuckmere	36	51	70	0	13	0

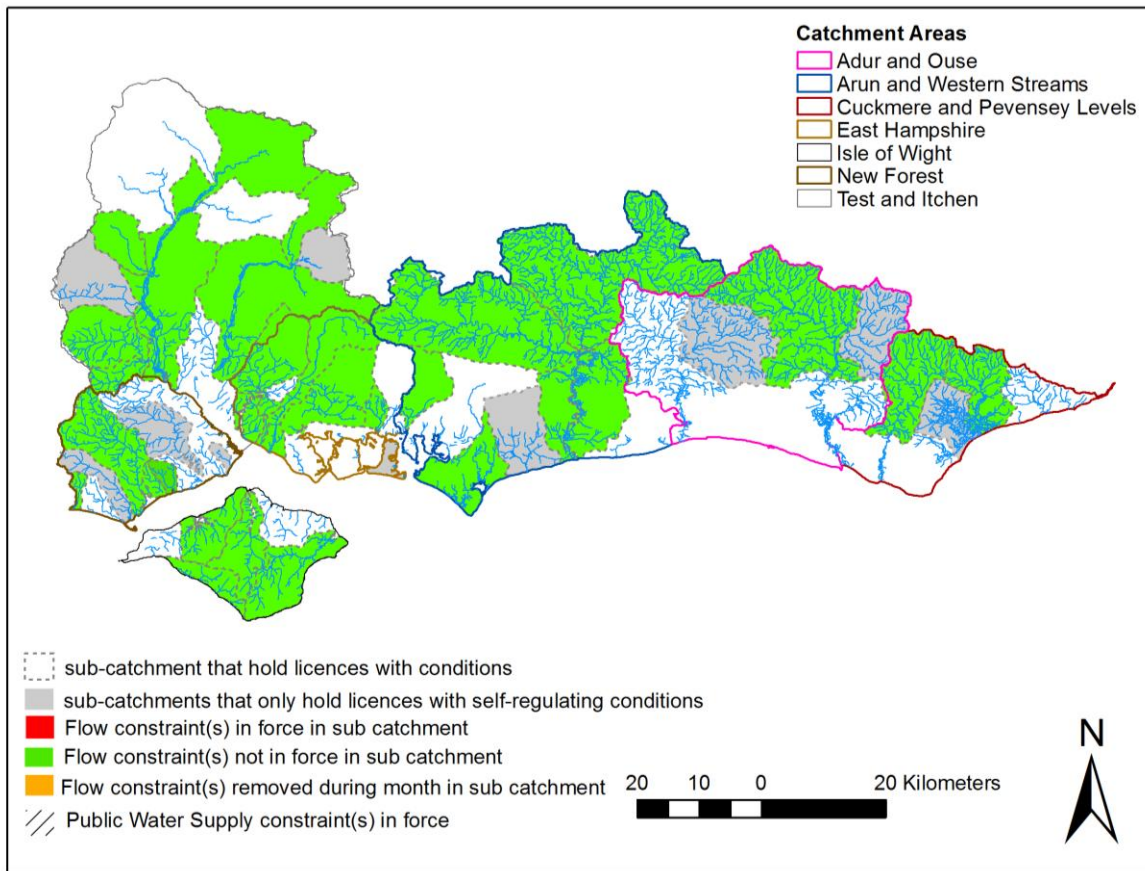
Pevensey Levels	38	51	74	0	11	0
Solent and South Downs	50	54	93	3	15	18

Soil Moisture Deficit

Area	End of month SMD (mm)	End of month SMD LTA (mm)
Test Chalk	19	25
East Hampshire Chalk	23	23
West Sussex Chalk	29	24
East Sussex Chalk	46	25
Isle of Wight	36	29
Western Rother Greensand	26	17
Hampshire Tertiaries	21	28
Lymington	27	27
Sussex Coast	27	27
Arun	32	23
Adur	34	24
Ouse	41	22
Cuckmere	45	24
Pevensey Levels	43	24
Solent and South Downs	32	25

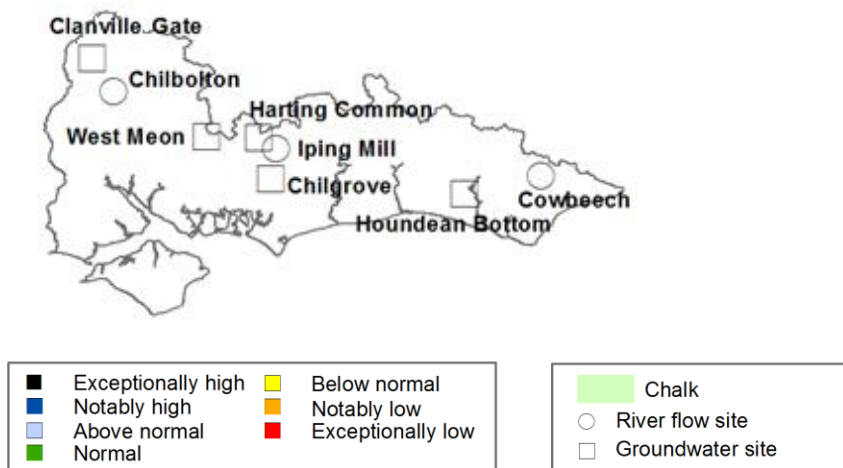
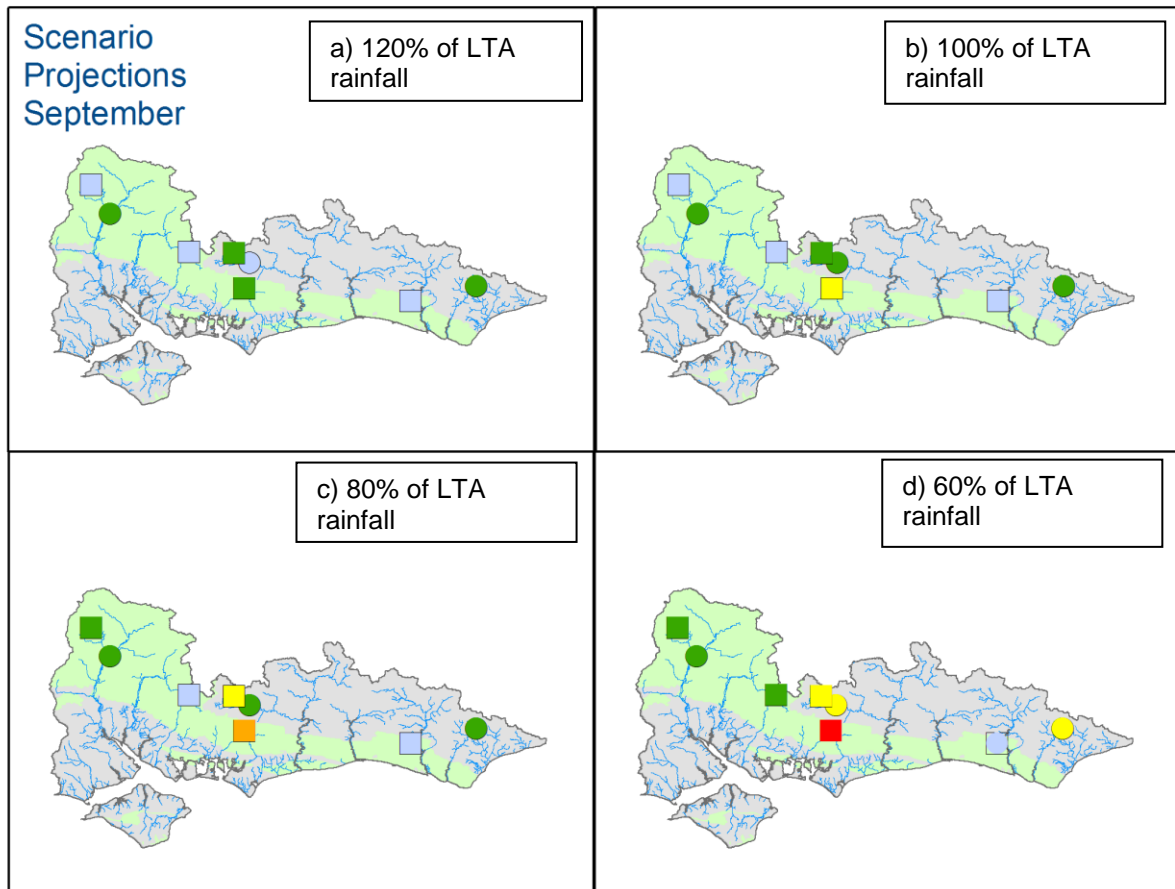
Environmental Impact

Flow Constraints



Catchment	No. licences with conditions currently operational in APR	START	WK1	WK2	WK3	WK4	END
		Number at Start of the month in force	No. licences with Flow Condition in Force in APR	No. licences with Flow Condition in Force in APR	No. licences with Flow Condition in Force in APR	No. licences with Flow Condition in Force in APR	Number at End of the month in force
A&O	3	0	0	0	0	0	0
A&W	34	0	0	0	0	0	0
C&P	6	0	0	0	0	0	0
EH	20	0	0	0	0	0	0
IOW	17	0	0	0	0	0	0
NF	15	0	0	0	0	0	0
T&I	25	0	0	0	0	0	0
Total in SSD	120	0	0	0	0	0	0

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