

# Monthly water situation report

## North East Area

### Summary – May 2020

May was another very dry month with monthly rainfall totals falling in the ‘notably low’ category across the whole North East area. River levels have fallen and monthly mean flows have decreased with flows at all indicator sites classified as ‘notably low’ or lower for the time of year. Soils continue to dry and are now classified as ‘dry’ or ‘very dry’. Reservoir stocks have declined across the area and are below average for the time of year.

### Rainfall

Rainfall was below average this month with monthly totals classified as ‘notably low’ in all catchments across the North East. Most days in May were dry and raingauges in the area experienced an average of 25 dry days where less than 1mm of rainfall was recorded. The most significant rainfall totals in May were measured across the area on the 18<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup> of the month. The total rainfall for March to May made 2020 the driest Spring in the HADUK dataset (which starts in 1891), for the Tees, Seaham and Northumbrian Sea tributary catchments, as well as the North East area as a whole. The Wear and the Tweed recorded their second driest spring behind 1929 and 1956 respectively and it was the third driest in the Tyne catchment behind the drought years of 1929 and 1956.

### Soil Moisture Deficit

Soils across the area continued to dry out in response to the dry, sunny weather and increased evapotranspiration. The soil moisture deficit in all catchments across the North East is in either the ‘dry’ or ‘very dry’ category.

### River Flows

Monthly mean flows at all indicator sites in the North East were classified as ‘notably low’ or ‘exceptionally low’ in May. The monthly mean flows ranged from 12% of the long term average (LTA) at Rutherford Bridge in the Greta catchment to 55% of the LTA at Middleton in Teesdale in the Tees catchment. The monthly mean flows at Heaton Mill, Mitford and Rothbury on the rivers Till, Wansbeck and Coquet respectively were the lowest May flows in their historic records.

The daily mean flows show all rivers started the month with either ‘normal’ or ‘below normal’ flows due to the late April rainfall. River flows receded throughout the month and by mid-May all had dropped to ‘below normal’ or ‘notably low’ levels for the time of year. ‘Exceptionally low’ flows were recorded on the Greta, South Tyne, Wansbeck, Coquet and Till. The rainfall during the third week of May increased daily mean flows slightly, although flow at all monitoring stations, with the exception of Middleton in Teesdale and Stanhope, remained at ‘notably low’ or ‘exceptionally low’ levels at the end of May.

### Groundwater Levels

Due to COVID-19 fieldwork restrictions no data was collected from the North East reporting boreholes for the month of May.

### Reservoir Storage

All reservoir stocks declined throughout May with the most noticeable changes observed in the Durham group and at Cow Green reservoir where decreases of 16% and 18% respectively were seen. All reservoir stocks in North East are below average for the time of year. Grassholme reservoir in the Lune/Balder group has been drawn down for essential safety work and the North Tyne continues to support the level in the Hallington Reservoirs via the Barrasford abstraction. The Waskerley airshaft abstraction was used from the third week in May to support levels in Waskerley reservoir.

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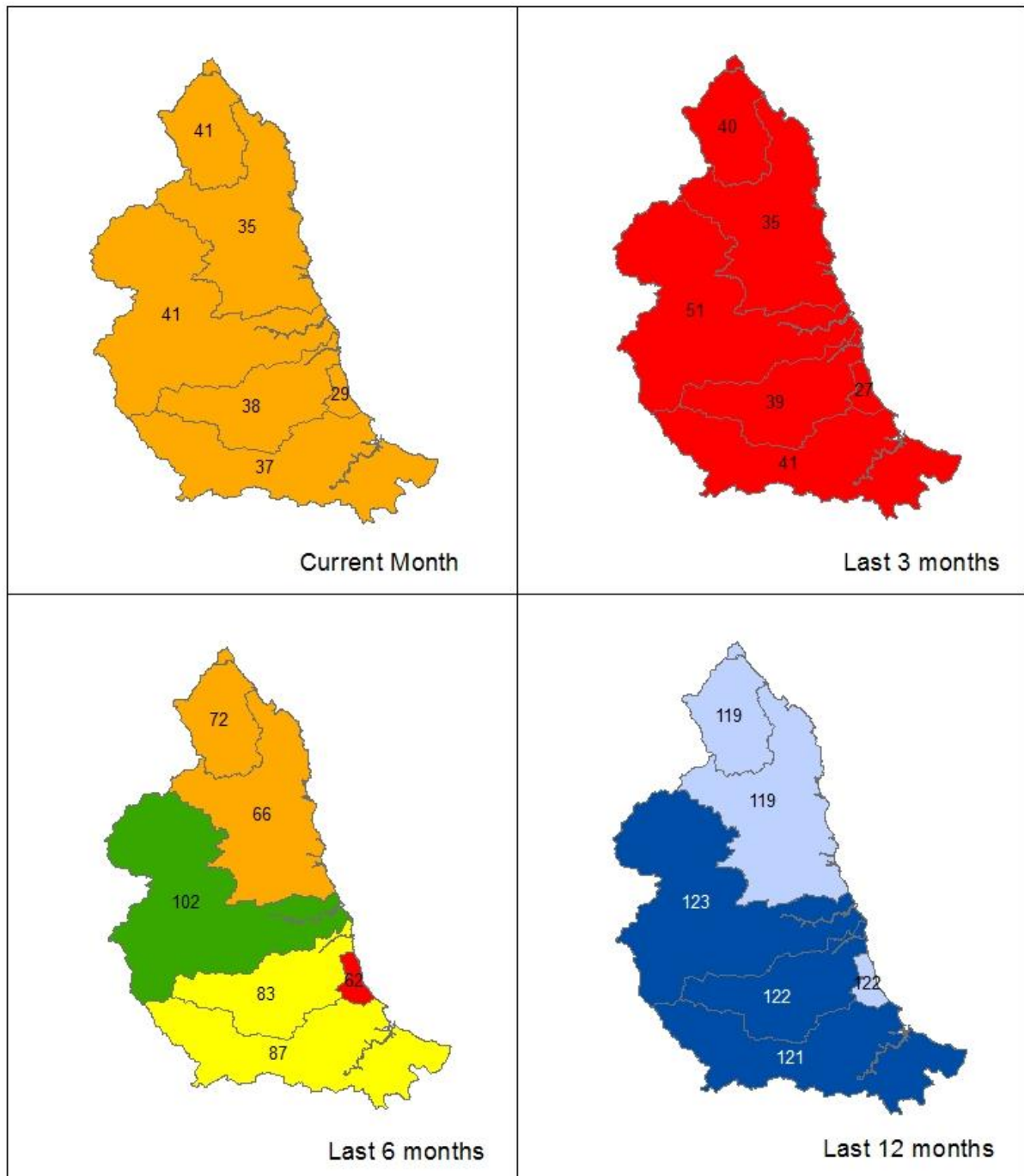
	Current % Stocks	Previous Month % Stock
<b>Kielder</b>	85.4	88.9
<b>North Tynedale Group</b>	67.7	79.4
<b>Derwent</b>	79.7	89.2
<b>Durham Group</b>	64.1	80.8
<b>Lune/Balder Group</b>	61.9	71.3
<b>Cow Green</b>	62.6	80.6

### Environmental Impact

The North East area Drought team announced that the Area had officially entered a period of 'Prolonged Dry Weather' on the 26th May. Water resource staff are closely regulating water abstractions and advising businesses and farmers on water usage and our teams are monitoring any environmental impacts such as algae blooms and fish distress from low oxygen levels in the rivers due to low flows.

Author: [GWHCL](#)

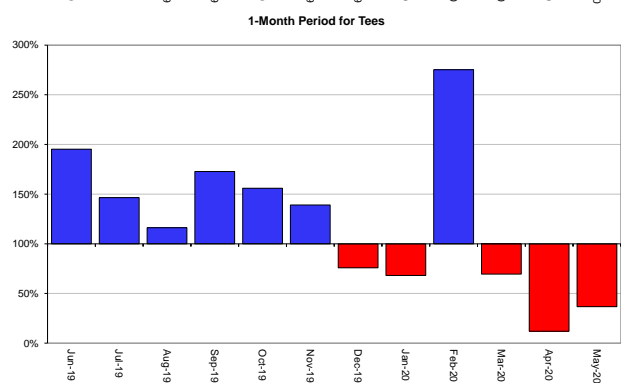
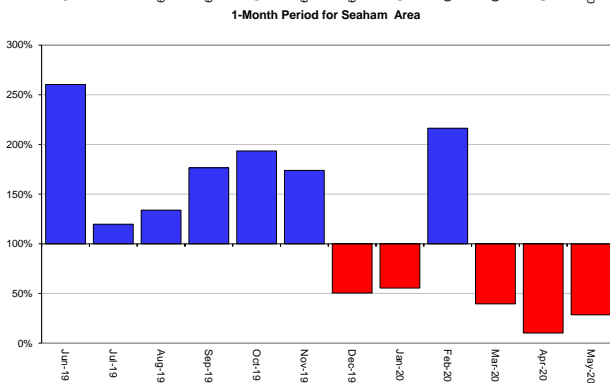
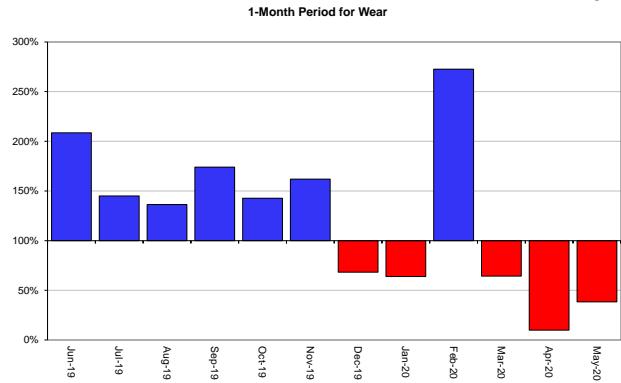
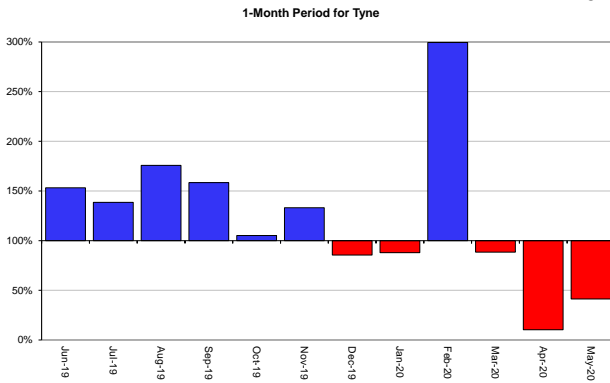
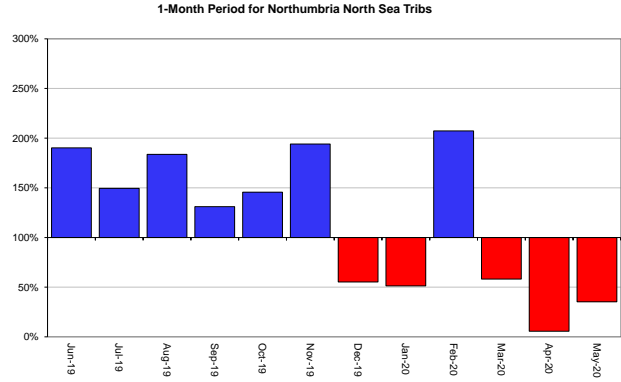
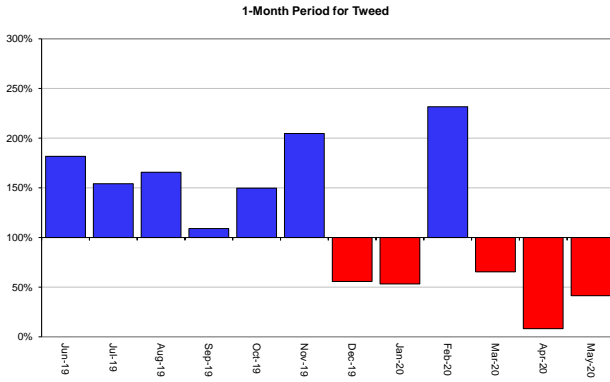
# Rainfall



Total rainfall (as a percentage of the long term average) for hydrological areas across the North East area for the current month, the last three months, the last six months, and the last twelve months, classed relative to an analysis of respective historic totals. HadUK data based on the Met Office 1km 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

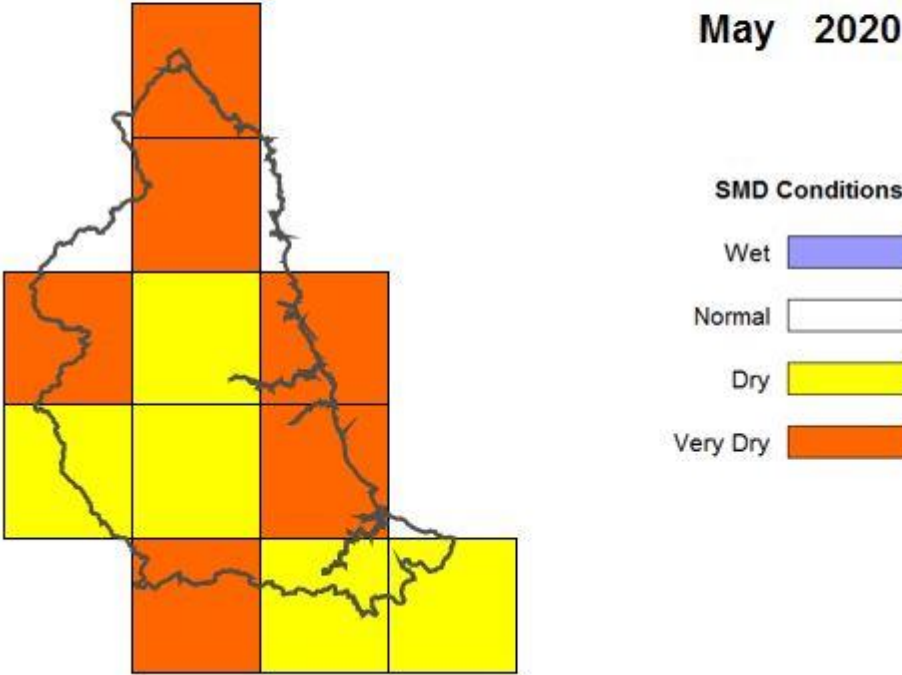
**Above average rainfall**

**Below average rainfall**



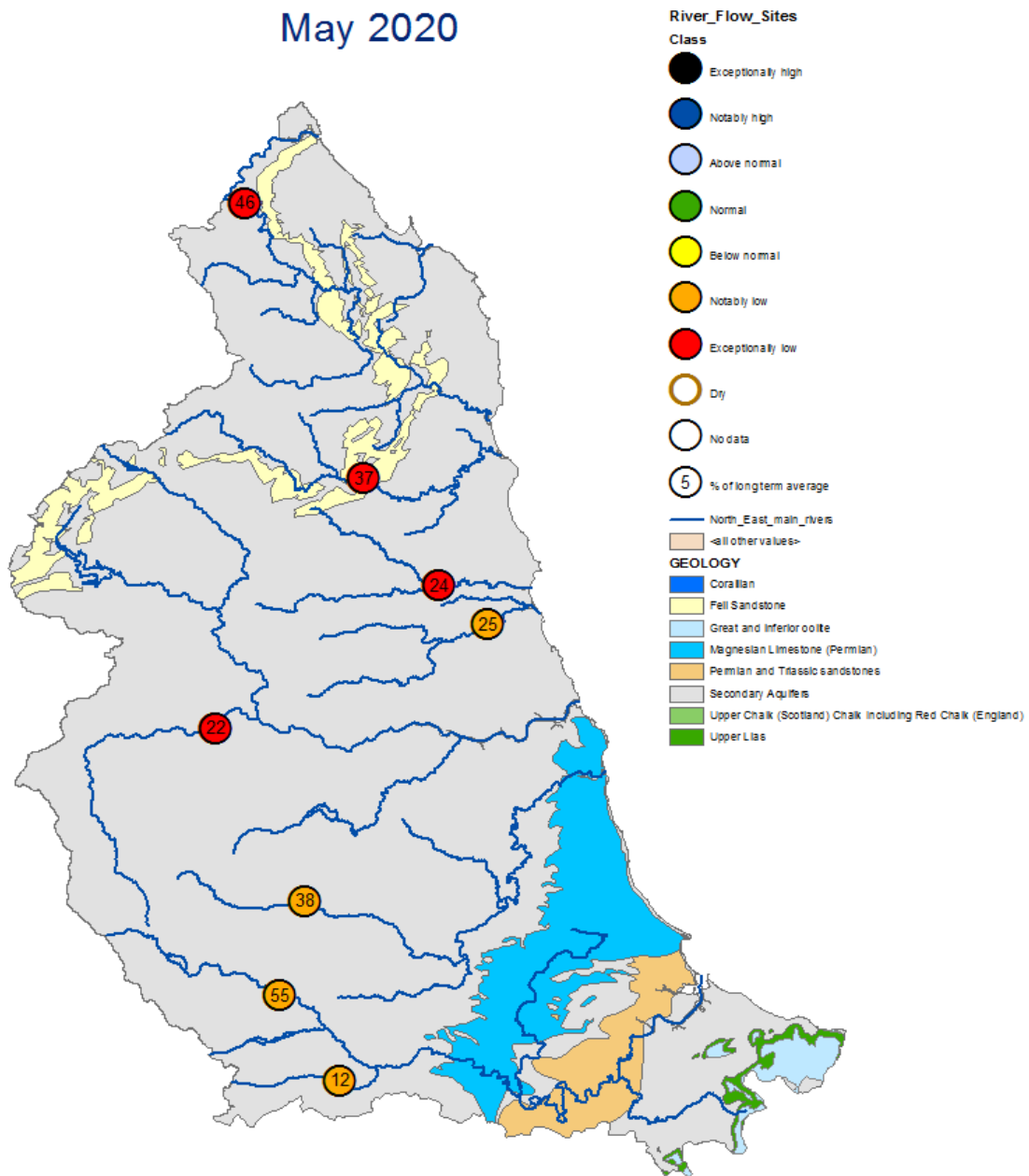
# Soil Moisture Deficit

## Environment Agency - North East Area Monthly MORECS SMD Levels

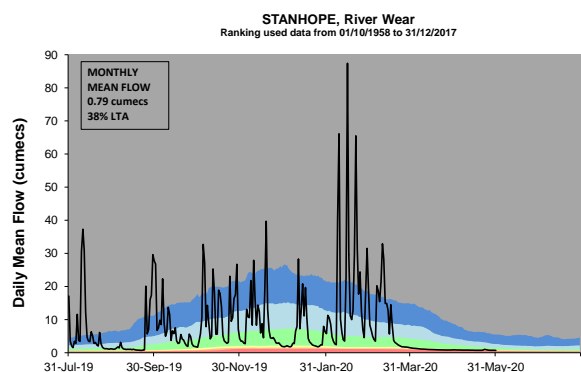
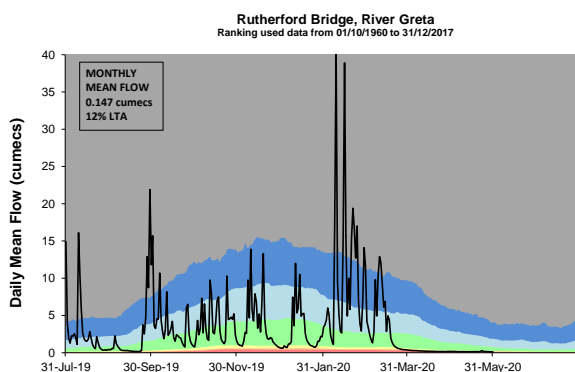
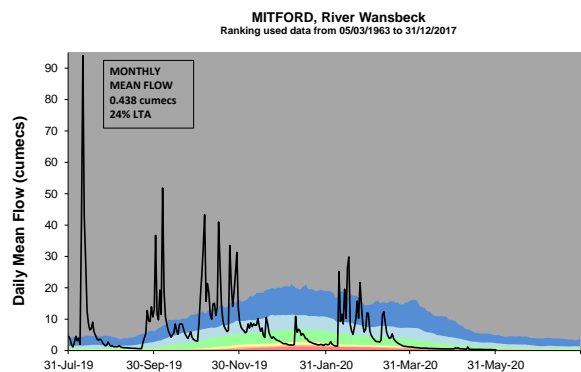
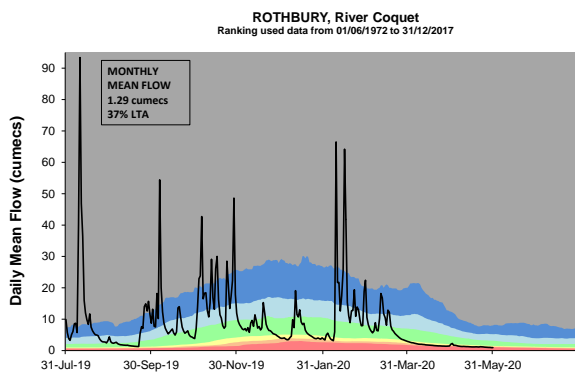
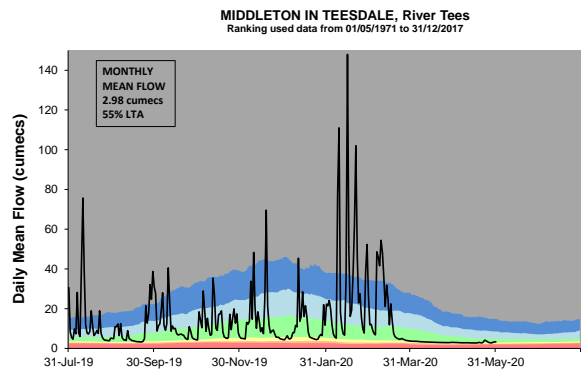
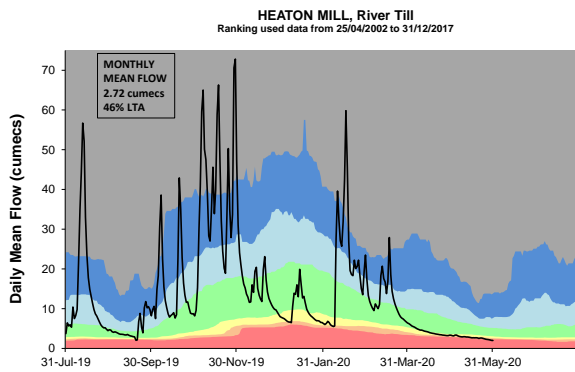
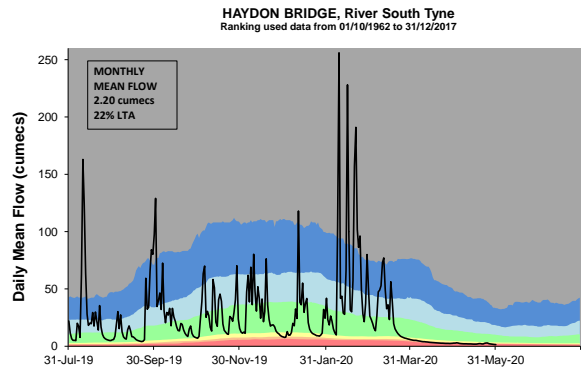
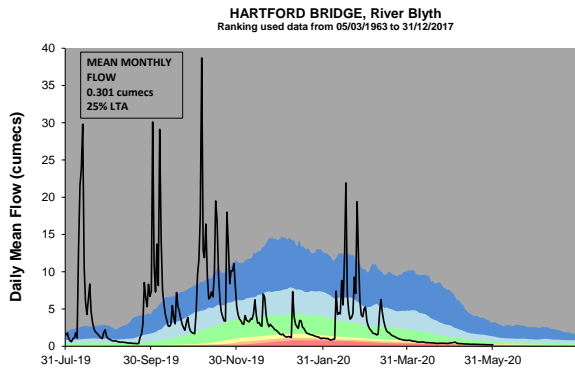
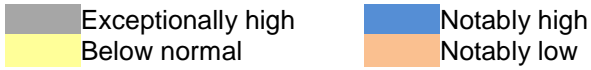


# River Flow

May 2020



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# Groundwater Levels

(due to COVID-19 fieldwork restrictions no data was collected from the North East reporting boreholes for the month of May)

May 2020

## Groundwater Sites NE

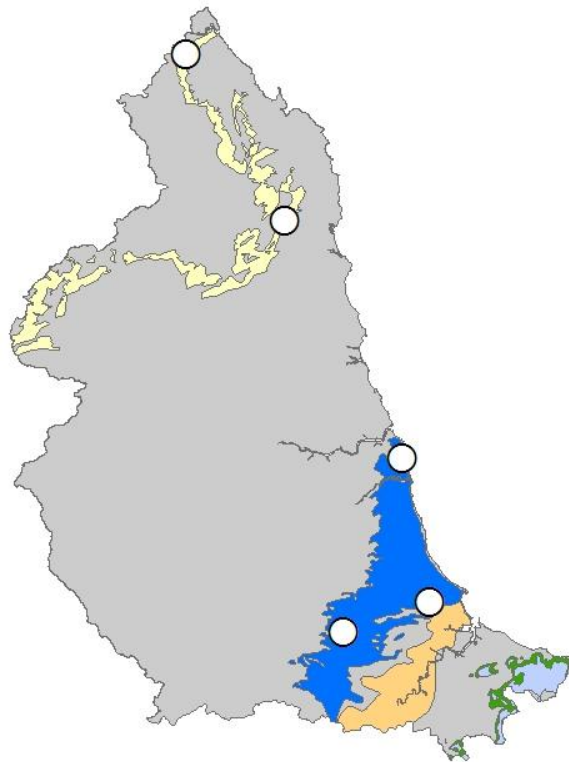
### Class

- Exceptionally high
- Notably high
- Above normal
- Normal
- Below normal
- Notably low
- Exceptionally low
- No data

## NE Area GWAquifers

### GEOLOGY

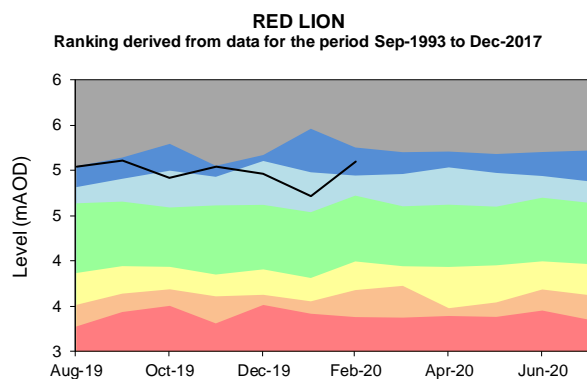
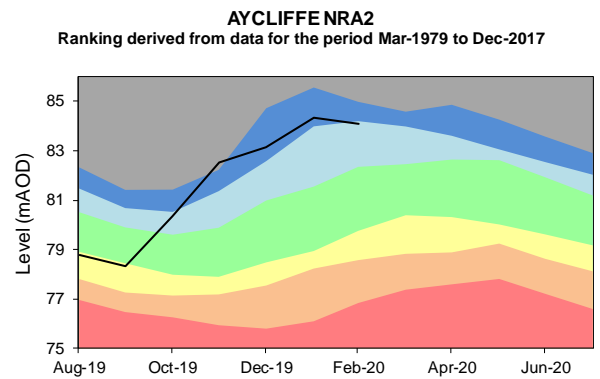
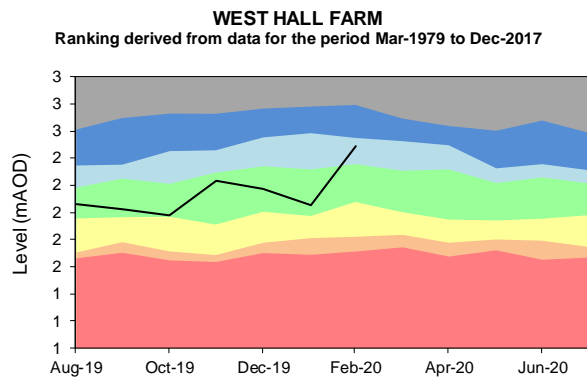
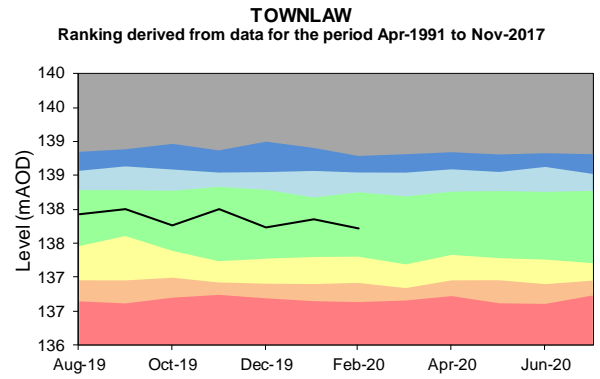
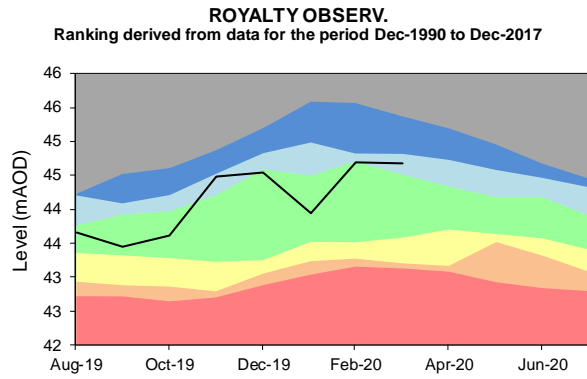
- Corallian
- Fell Sandstone
- Great and inferior oolite
- Magnesian Limestone (Permian)
- Permian and Triassic sandstones
- Secondary Aquifers
- Upper Chalk (Scotland) Chalk including Red Chalk (England)
- Upper Lias



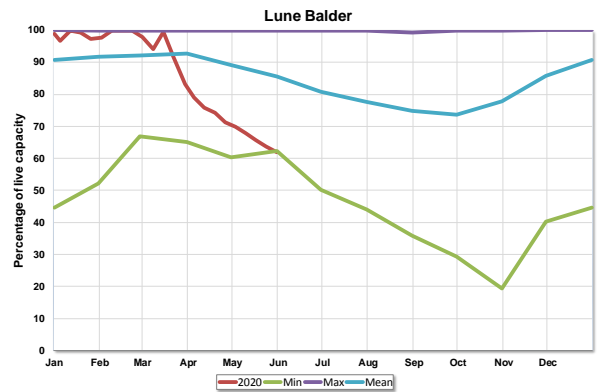
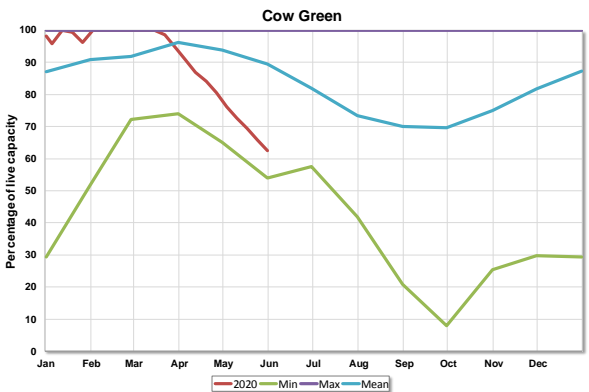
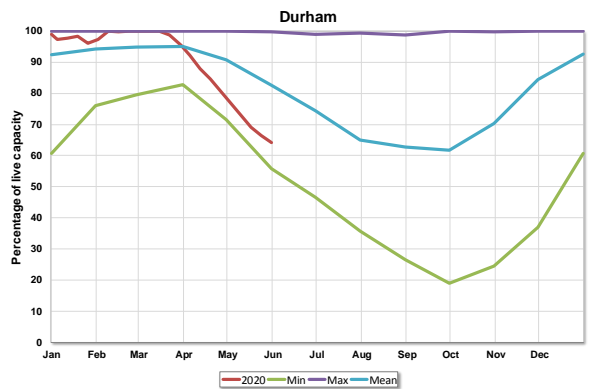
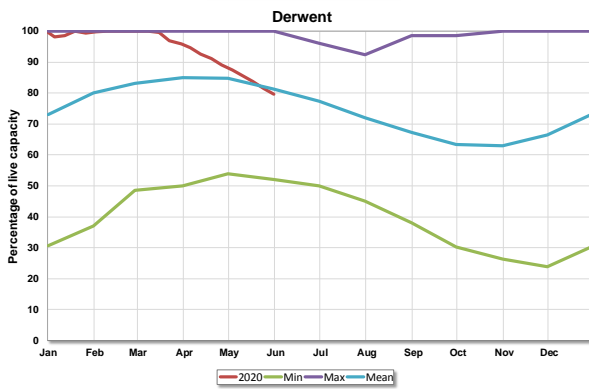
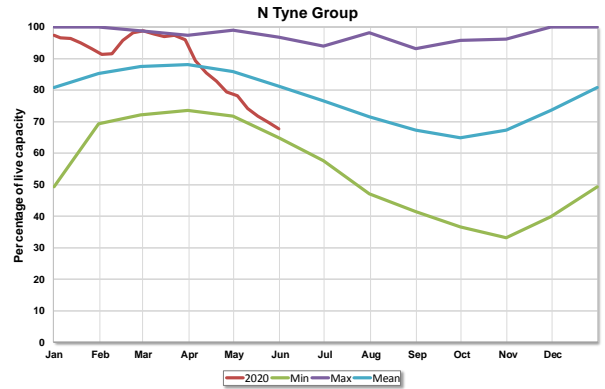
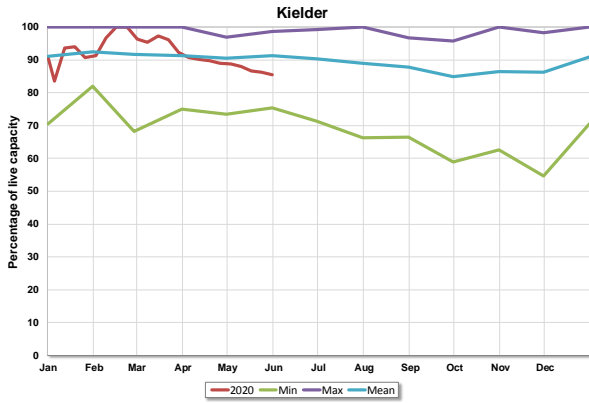
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**Groundwater data shown below does not include any data from mid-March**



# Reservoir Stocks – Data from Water Company



## Glossary

### Term

### Definition

Aquifer	A geological formation able to store and transmit water.
Areal average rainfall	The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).
Effective rainfall	The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).
Groundwater	The water found in an aquifer
Recharge	The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).
Reservoir live capacity	The reservoir capacity normally usable for storage to meet established reservoir operating requirements. It is the total capacity less that not available because of operating agreements or physical restrictions. Only under abnormal conditions, such as a severe water shortage might this additional water be extracted.
Soil moisture deficit (SMD)	The difference between the amount of water actually in the soil and the amount of water that the soil can hold. Expressed in depth of water (mm).

### Categories

Exceptionally high	Value likely to fall within this band 5% of the time
Notably high	Value likely to fall within this band 8% of the time
Above normal	Value likely to fall within this band 15% of the time
Normal	Value likely to fall within this band 44% of the time
Below normal	Value likely to fall within this band 15% of the time
Notably low	Value likely to fall within this band 8% of the time
Exceptionally low	Value likely to fall within this band 5% of the time

### Units

cumecs	Cubic metres per second ( $\text{m}^3 \text{s}^{-1}$ )
mAOD	Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).