

## Natural Resources Wales

- The monthly rainfall total for Wales during January was 61% of the Long Term Average (LTA, 1961-90). South East, South West and North Wales received 46%, 72% and 66% of the LTA, respectively.
- At the end of January, the differences between soil moisture deficit (SMD) values and the LTA across Wales were from -2 to 0 mm. Soil moisture deficit values were very similar to the LTA values for all squares in January.
- For river flows in Wales, 10 out of 29 indicator sites (which had flow data available) were classed as *Exceptionally low* and 11 sites were *Notably low*. The remaining 8 sites were *Below normal*.
- The cumulative reservoir storage for 15 out of 18 indicator reservoirs was greater than 95% at the end of January. All reservoirs were within normal operating ranges.

### Rainfall\*

The monthly rainfall total for Wales was 61% of the LTA for January. The percentage of rainfall recorded in catchments compared with their LTA across Wales was between 36% (Lower Wye) and 93% (Clwyd). The rainfall total for Wales was 55.7mm less than the January LTA. For South East, South West and North Wales the rainfall totals were 46%, 72% and 66% of LTA, respectively.

Rainfall Map [Wales](#)

Rainfall Charts [National & Areas](#) [South East Wales](#) [North Wales](#) [South West Wales](#)

\* using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright)

### Soil Moisture Deficit/Recharge

The differences between the soil moisture deficits and the LTA for the 23 MORECS squares were from -2 to 0 mm and soil moisture deficit values were very similar to the LTA values for all the squares for January.

SMD Map [Wales](#)

SMD Charts [Compare to LTA](#)

All data are provisional and may be subject to revision.

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## River Flows

River flows were between *Exceptionally low* and *Below normal* for all the indicator sites across Wales. 10 out of 29 indicator sites (which had flow data available) were classed as *Exceptionally low* and 11 sites were *Notably low*. The remaining 8 sites were *Below normal*.

**South East:** Flows in the area ranged from 31% (River Lugg at Butts Bridge) to 71% (River Usk at Trostrey Weir) of the January LTA values.

**South West:** The river flows within this area ranged from 42% (River Ewenny at Keepers Lodge) to 64% (River Cothi at Felin Mynachdy) of the January LTA values.

**North:** Flows in the area ranged from 36% (River Alwen at Druid) to 62% (River Clwyd at Pont y Cambwll) of the January LTA values.

River Flow Map      [Wales](#)  
River Flow Table      [% of LTA and compare to previous year](#)  
River Flow Charts      [South East Wales](#)      [North Wales](#)      [South West Wales](#)

## Groundwater Levels

Groundwater levels for January at indicator sites (9 data available sites) were classed between *Exceptionally low* (Eastwick) to *Above normal* (Dodleston). 1 site was *Notably low* (Pant-y-Lladron) and 4 sites were *Below normal* (Fernbank, Greenfield Garage, Llanfair and Handley). The remaining 2 sites were *Normal* (Pont y Cambwll and Broxton Obs)

Groundwater Map      [Wales](#)  
Groundwater Charts      [South East Wales](#)      [North Wales](#)      [South West Wales](#)

## Reservoir Storage

At the end of January the cumulative reservoir storage for 15 out of 18 indicator reservoirs were greater than 95% full. All reservoirs were within normal operating ranges.

Reservoir Charts      [South East Wales](#)      [North Wales](#)      [South West Wales](#)

All data on Water Situation Reports are provisional, based on spot readings, and are subject to revision.

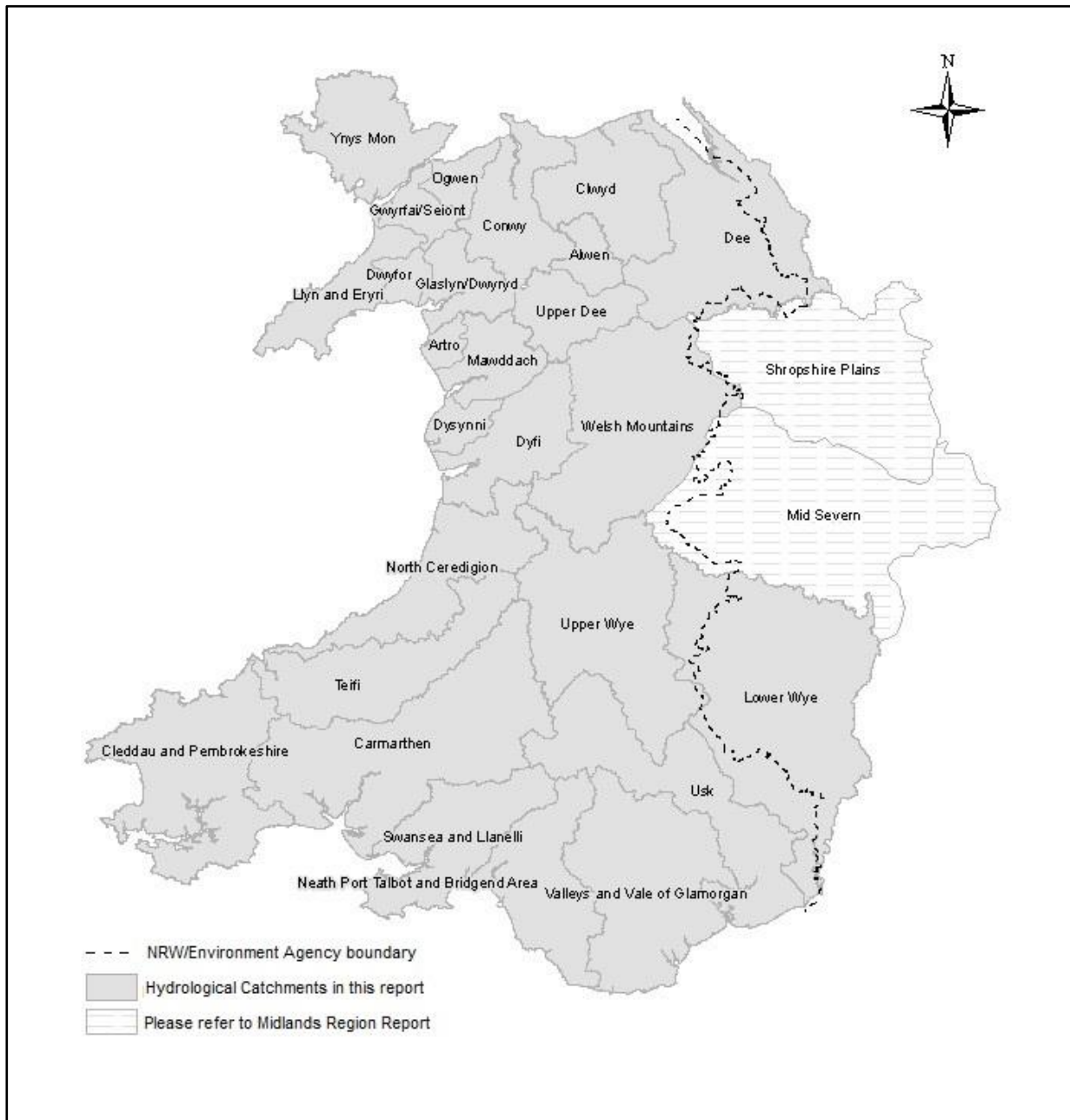
Author: Zhong Zhang Telephone: 03000 654521

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## Natural Resources Wales



**Figure 1: The Natural Resources Wales Water Situation Report features sites in the catchments shown. Parts of the Shropshire Plains and Mid Severn catchments are within Wales. For full information on these catchments, please see the Environment Agency Midlands Water Situation Report.**

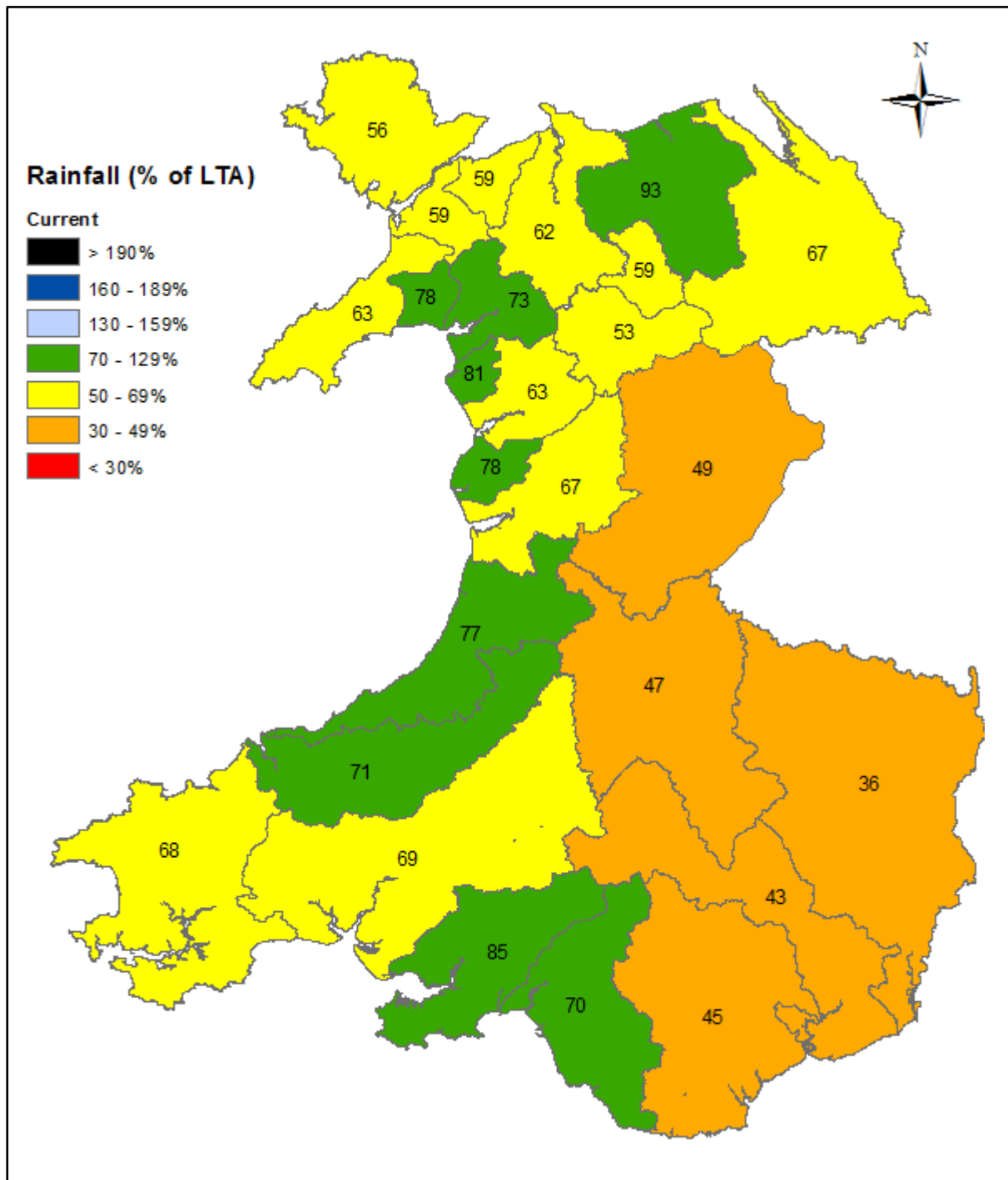
**For areas adjoining Natural Resources Wales, please see the reports for Environment Agency Midlands and North West England:**

[Environment Agency - Midlands, England Water Situation Report](#)  
[Environment Agency - North West, England Water Situation Report](#)

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## Rainfall



**Figure 2: Calculated catchment average January rainfall totals as a percentage of the 1961-90 January long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).**

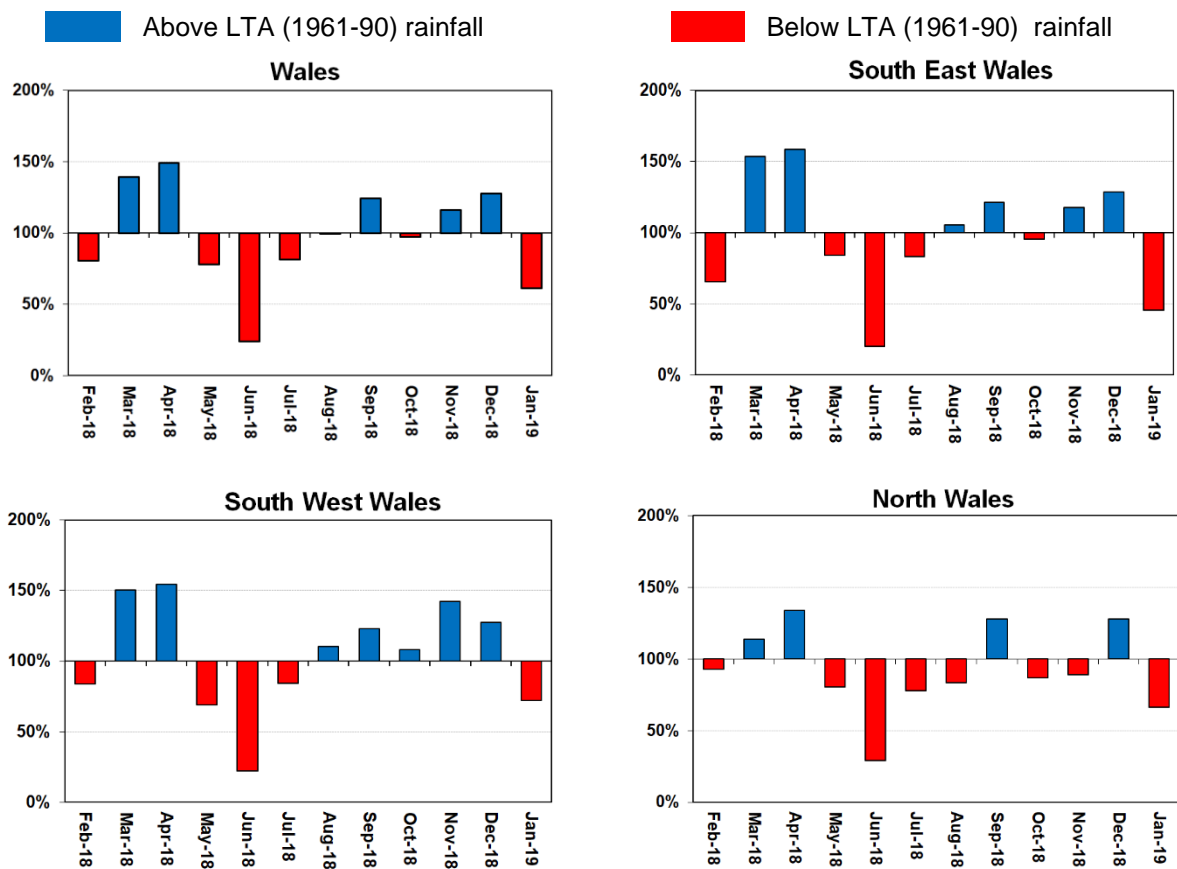
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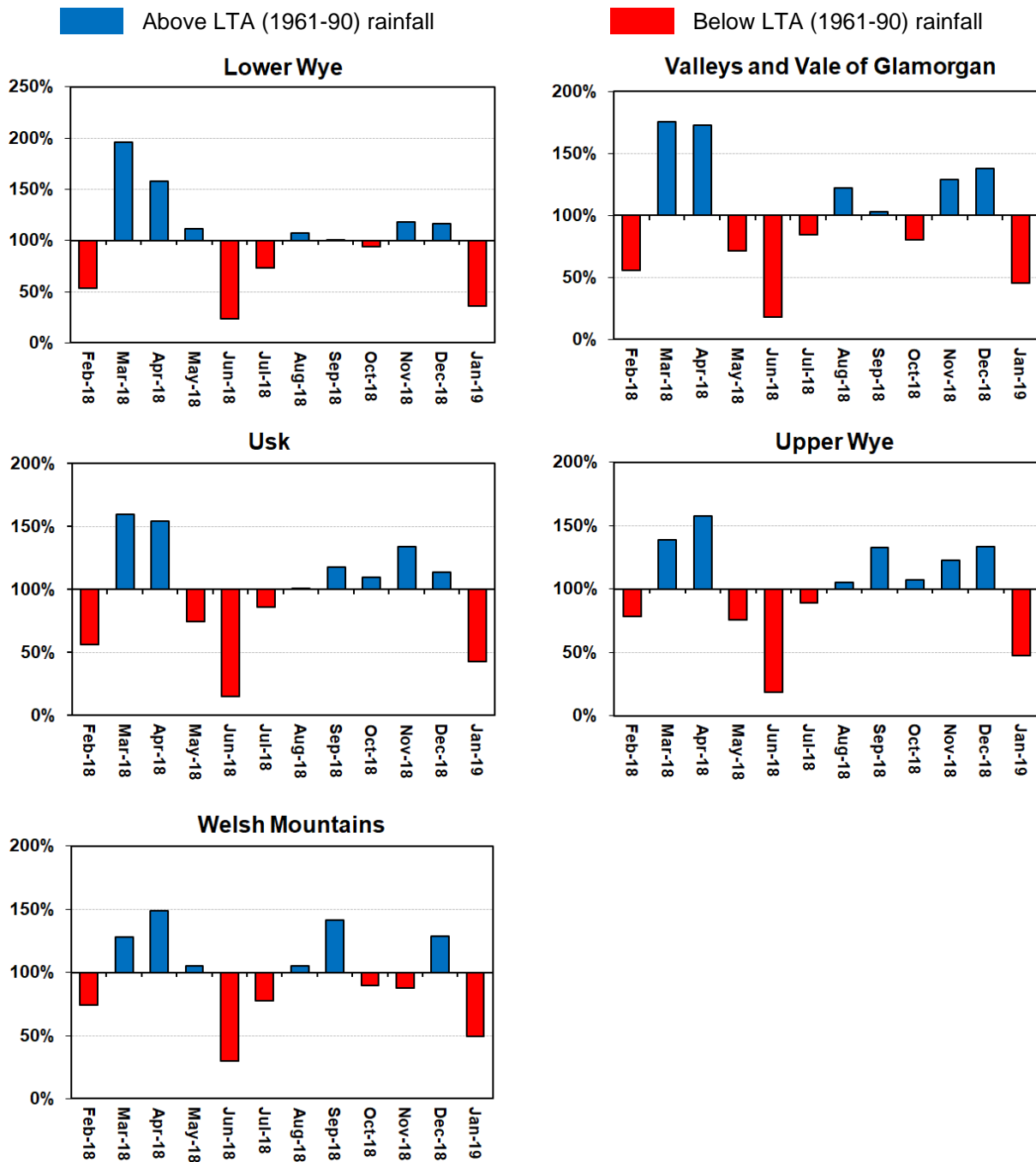
## Rainfall Charts

Figure 3: Rainfall Charts: National and Areas



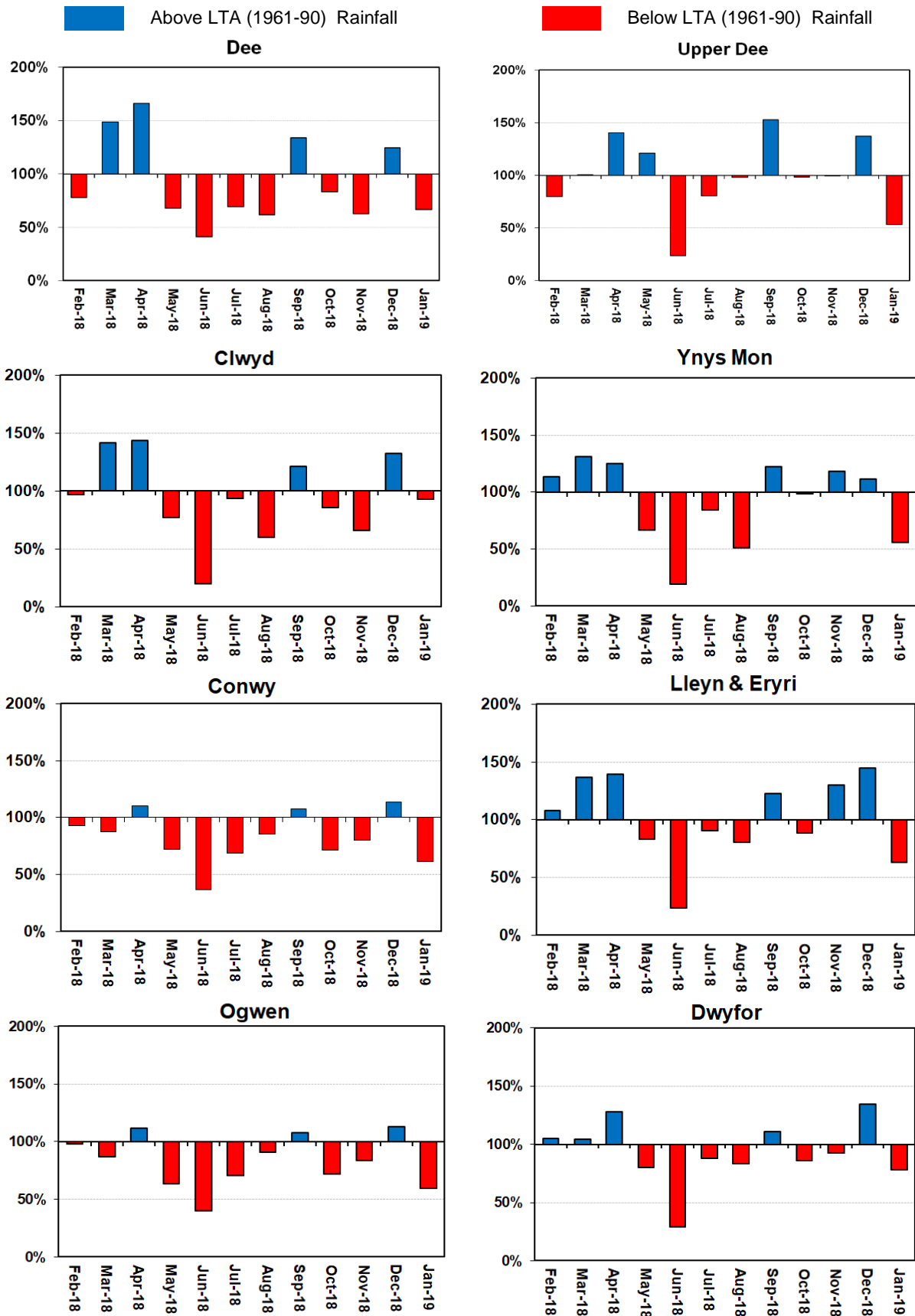
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

**Figure 4: Rainfall Charts: South East Wales**



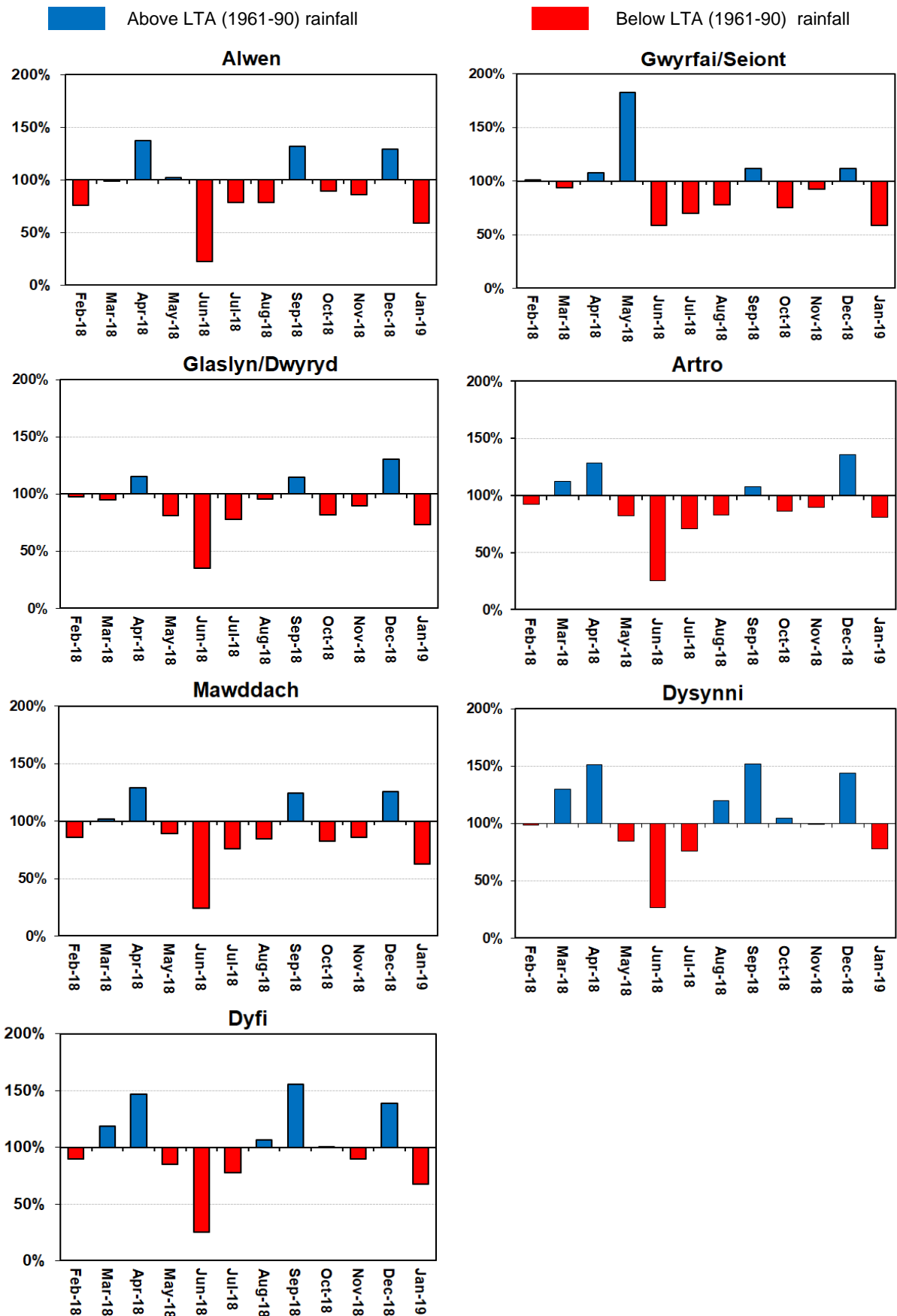
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for South East Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

**Figure 5: Rainfall Charts: North Wales**



Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

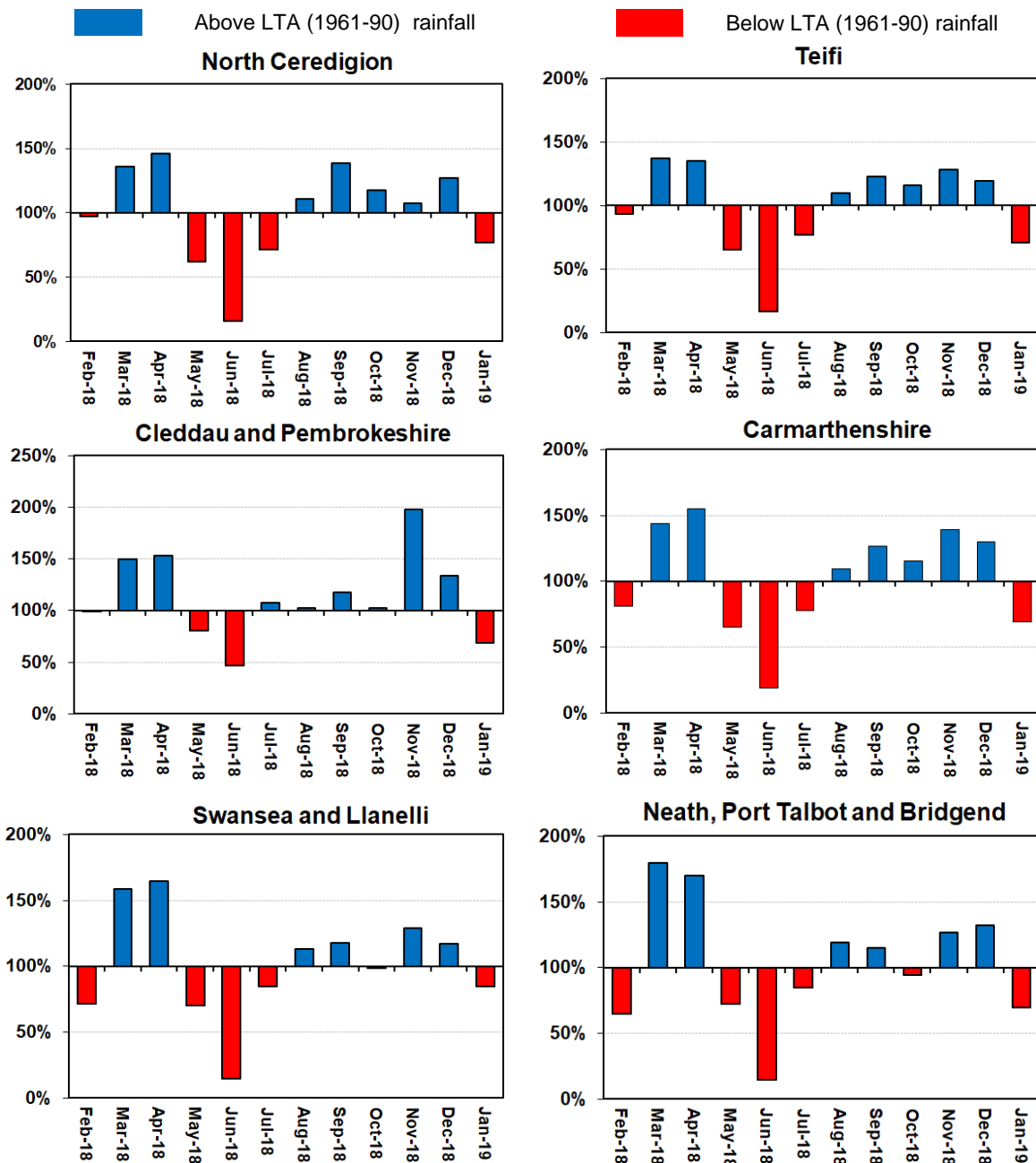
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Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).



**Figure 6: Rainfall Charts: South West Wales**



Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for South West Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

## Soil Moisture Deficit (SMD)

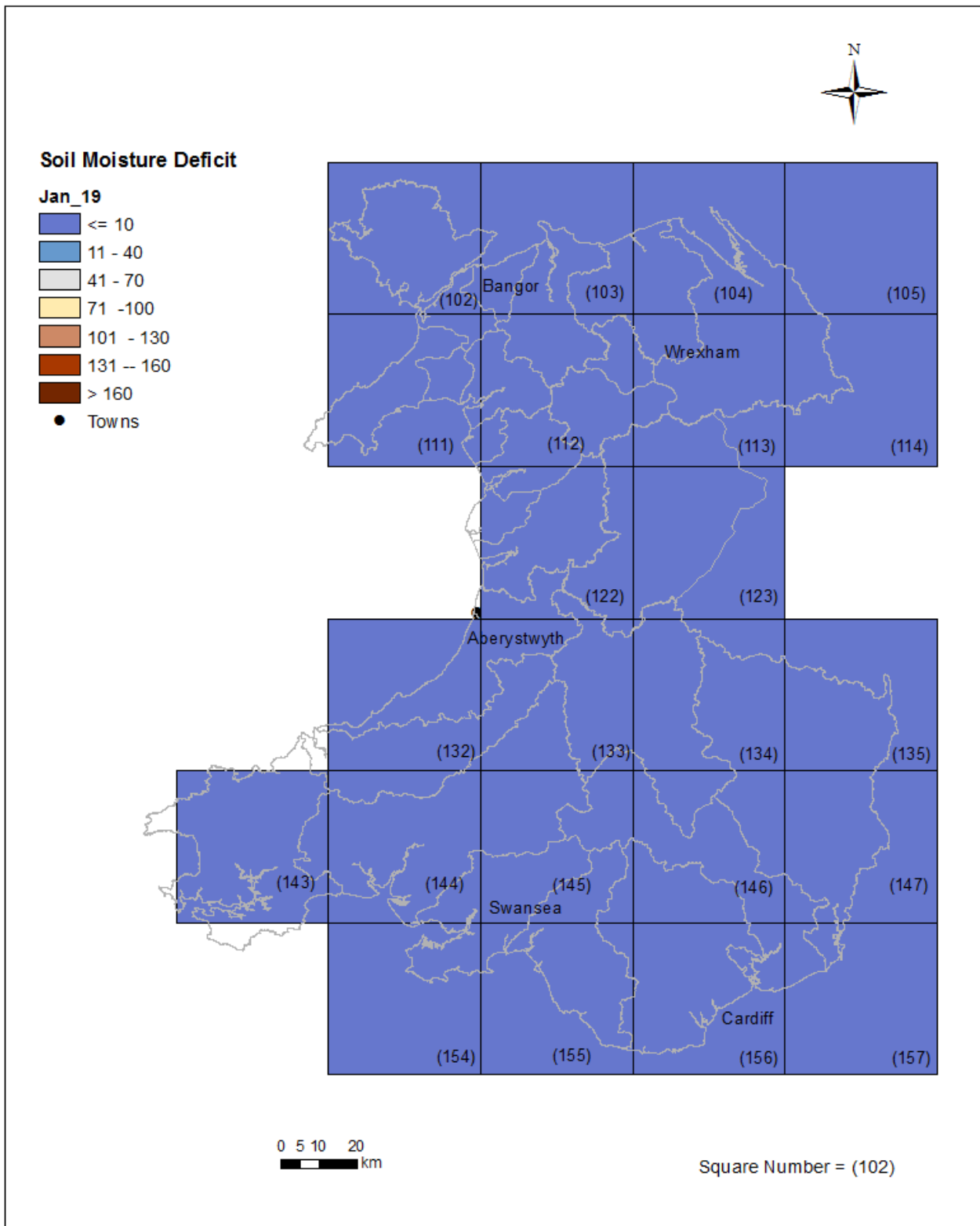


Figure 7: MORECS soil moisture deficits (mm) for January for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

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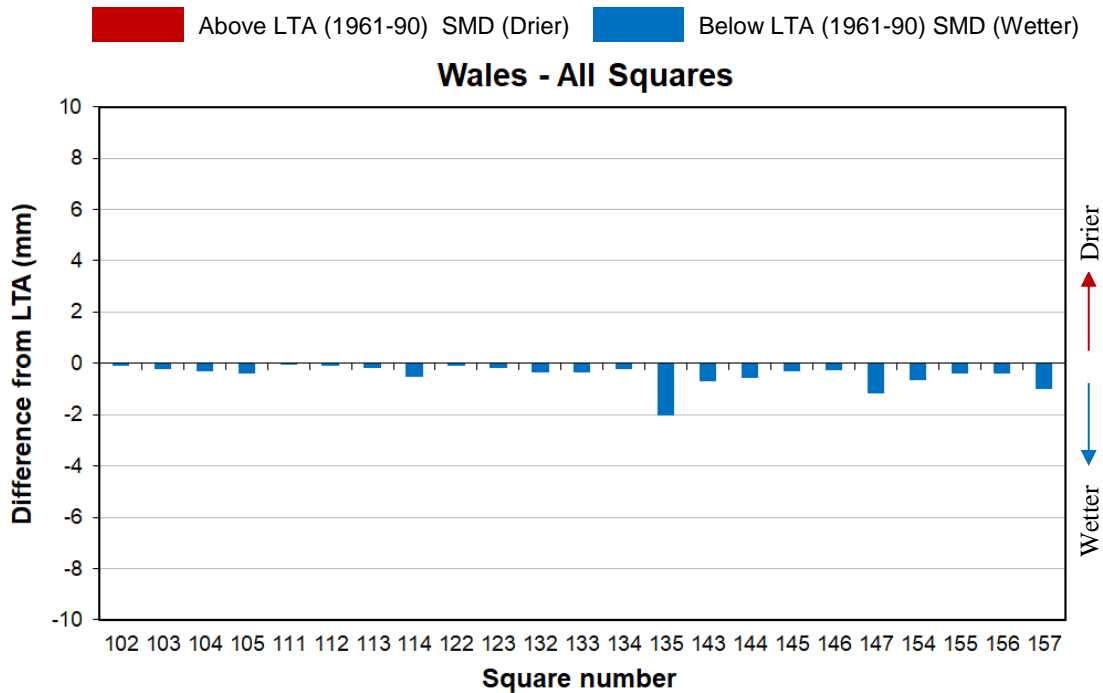


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for January for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

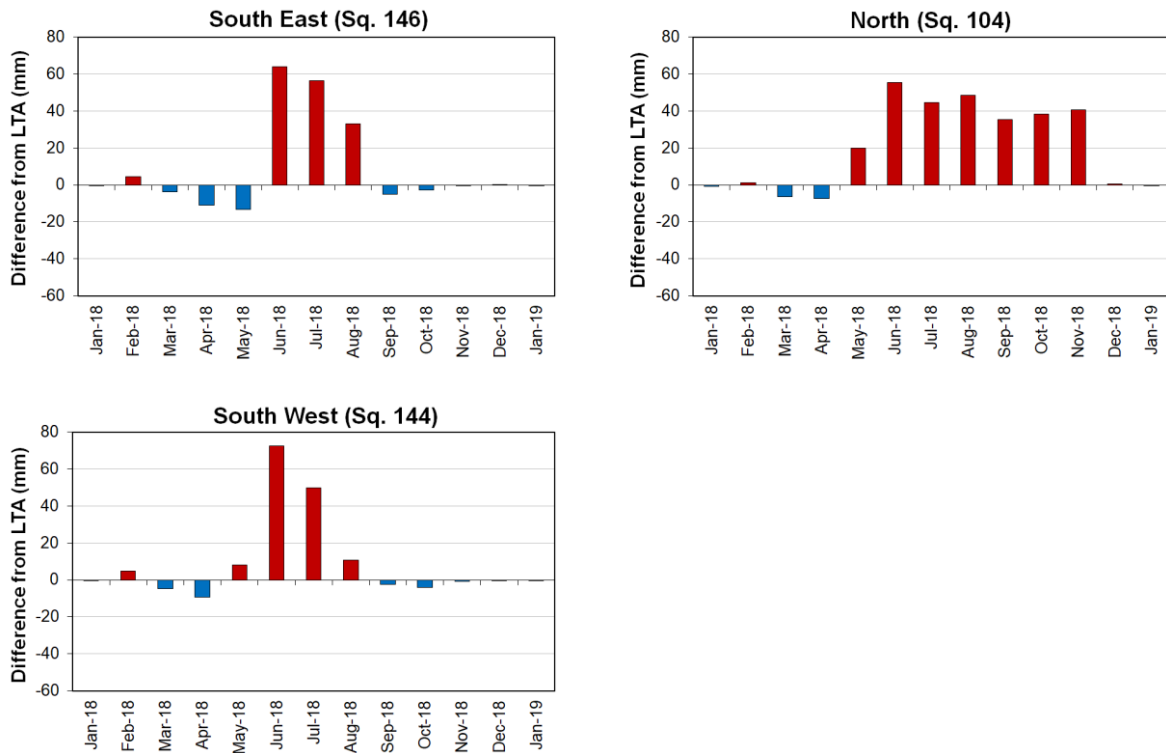


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales.)

## River Flow

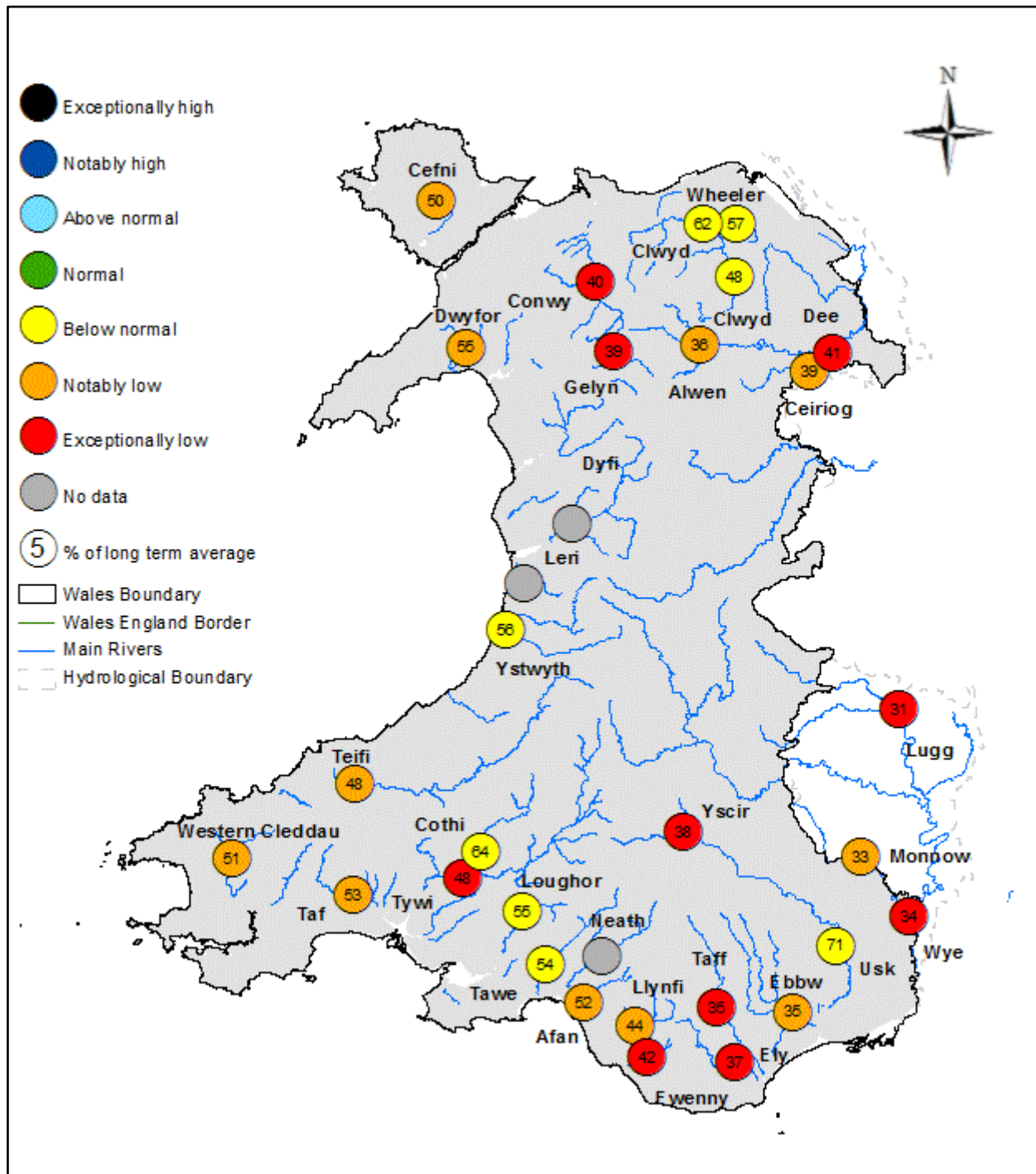


Figure 10: Monthly mean river flow for January, classed relative to analysis of historic January monthly means (Source: Natural Resources Wales).

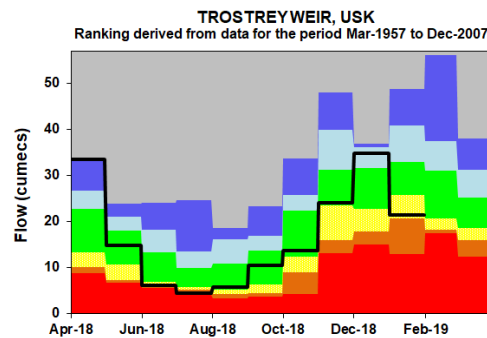
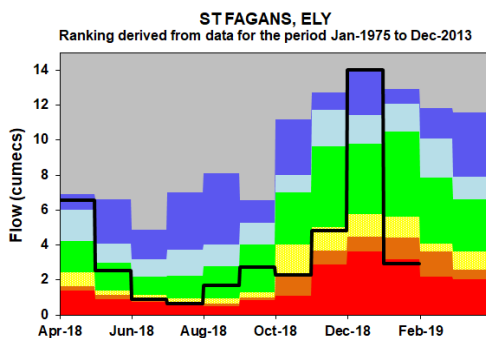
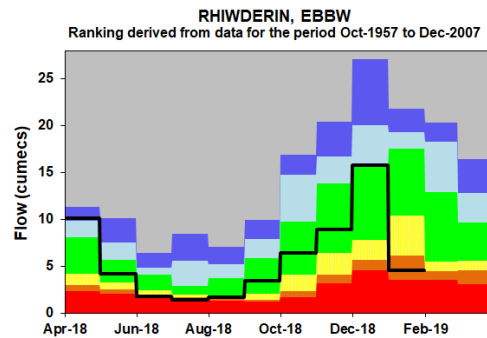
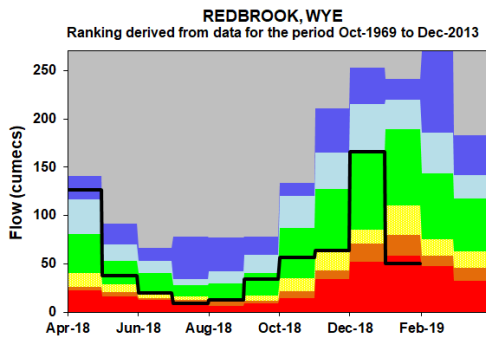
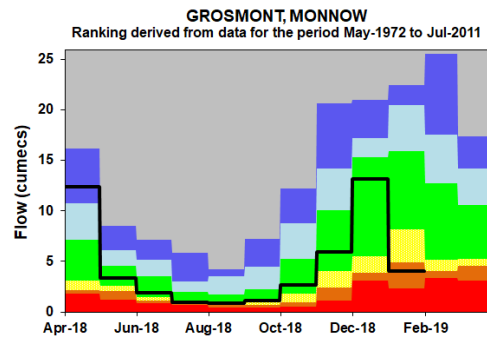
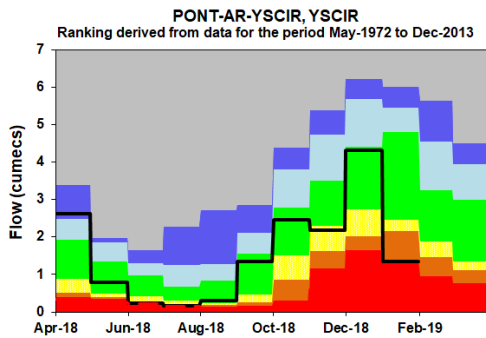
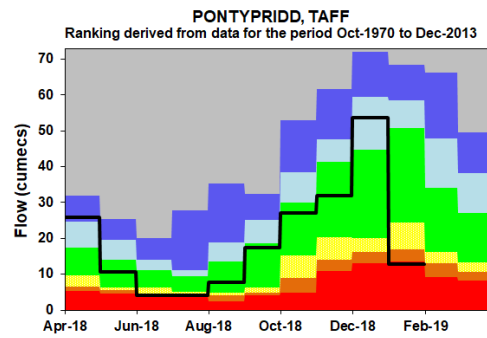
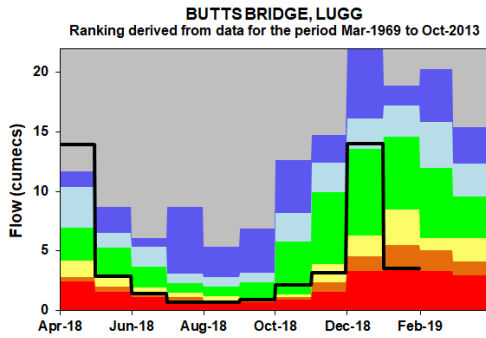
SITE NAME	RIVER	January 2019			January 2018		January LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Min Monthly Mean (m3/s)	Max Monthly Mean (m3/s)
<b>River Flow Sites : South East Area</b>									
Butts Bridge	Lugg	Exceptionally low	31%	3.55	125%	14.40	11.51	2.48	19.90
Grosmont	Monnow	Notably low	33%	4.09	86%	10.60	12.26	1.51	23.40
Pont ar Yscir	Yscir	Exceptionally low	38%	1.35	116%	4.16	3.59	0.43	6.19
Pontypridd	Taff	Exceptionally low	35%	12.90	111%	40.80	36.72	5.08	68.80
Redbrook	Wye	Exceptionally low	34%	50.10	113%	165.00	145.55	18.30	266.00
Rhiwderin	Ebbw	Notably low	35%	4.56	93%	12.30	13.17	2.53	24.60
St Fagans	Ely	Exceptionally low	37%	2.93	128%	11.00	7.99	1.47	13.10
Trostrey Weir	Usk	Below normal	71%	21.50	113%	34.40	30.46	7.33	62.40
<b>River Flow Sites : North Area</b>									
Bodfari	Wheeler	Below normal	57%	0.66	103%	1.18	1.15	0.46	1.88
Bodffordd	Cefni	Notably low	50%	0.38	116%	0.88	0.76	0.12	1.35
Brynkinalt Weir	Ceiriog	Notably low	39%	2.16	114%	6.29	5.53	1.12	10.50
Cwmlanerch	Conwy	Exceptionally low	40%	12.10	112%	34.10	30.39	3.62	59.80
Cynefail	Gelyn	Exceptionally low	39%	0.44	117%	1.31	1.12	0.16	2.27
Dol y Bont	Leri						2.38	0.41	3.93
Druid	Alwen	Notably low	36%	3.10	117%	10.20	8.70	1.26	18.30
Dyfi bridge	Dyfi						36.76	3.48	68.80
Garndolbenmaen	Dwyfor	Notably low	55%	2.01	130%	4.79	3.68	0.80	6.47
Manley Hall	Dee	Exceptionally low	41%	21.90	107%	57.40	53.55	8.42	96.90
Pont y Cambwll	Clwyd	Below normal	62%	7.17	145%	16.70	11.48	2.19	20.70
Ruthin Weir	Clwyd	Below normal	48%	1.35	132%	3.74	2.84	0.55	5.44
<b>River Flow Sites : South West Area</b>									
Capel Dewi	Tywi	Exceptionally low	48%	33.30	131%	90.70	69.23	7.24	123.00
Clog y Fran	Taf	Notably low	53%	7.14	139%	18.90	13.59	2.53	25.90
Coytrahen	Llynfi	Notably low	44%	1.56	139%	4.94	3.56	0.52	6.67
Felin Mynachdy	Cothi	Below normal	64%	12.60	114%	22.30	19.64	1.74	37.60
Glanteifi	Teifi	Notably low	48%	24.10	136%	68.80	50.51	6.18	106.00
Keepers Lodge	Ewenny	Exceptionally low	42%	1.28	131%	3.97	3.03	0.70	5.95
Marcroft	Afan	Notably low	52%	4.11	122%	9.60	7.85	1.10	13.80
Pont Llwlwyn	Ystwyth	Below normal	56%	5.54	141%	13.90	9.83	1.14	18.30
Treffgarne *	Western Cleddau	Notably low	51%	3.36	122%	8.07	6.61	1.40	14.33
Resolven	Neath				79%	12.80	16.20	1.78	33.70
Tir-y-Dail	Loughor	Below normal	55%	2.00	123%	4.47	3.64	0.57	6.83
Ynystanglws	Tawe	Below normal	54%	10.60	124%	24.20	19.48	1.48	36.60

**Figure 11: Monthly mean river flow for January with comparison against previous year expressed as a percentage of the January long term average and classed relative to analysis of historic January monthly means. (Source: Natural Resources Wales). (\* For Treffgarne station the LTAs were derived using scaled historical flows (1965-2003) from the downstream station at Prendergast Mill. There was no flow data for Resolven due to the maintenance work at the gauge station)**

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## River Flow Charts

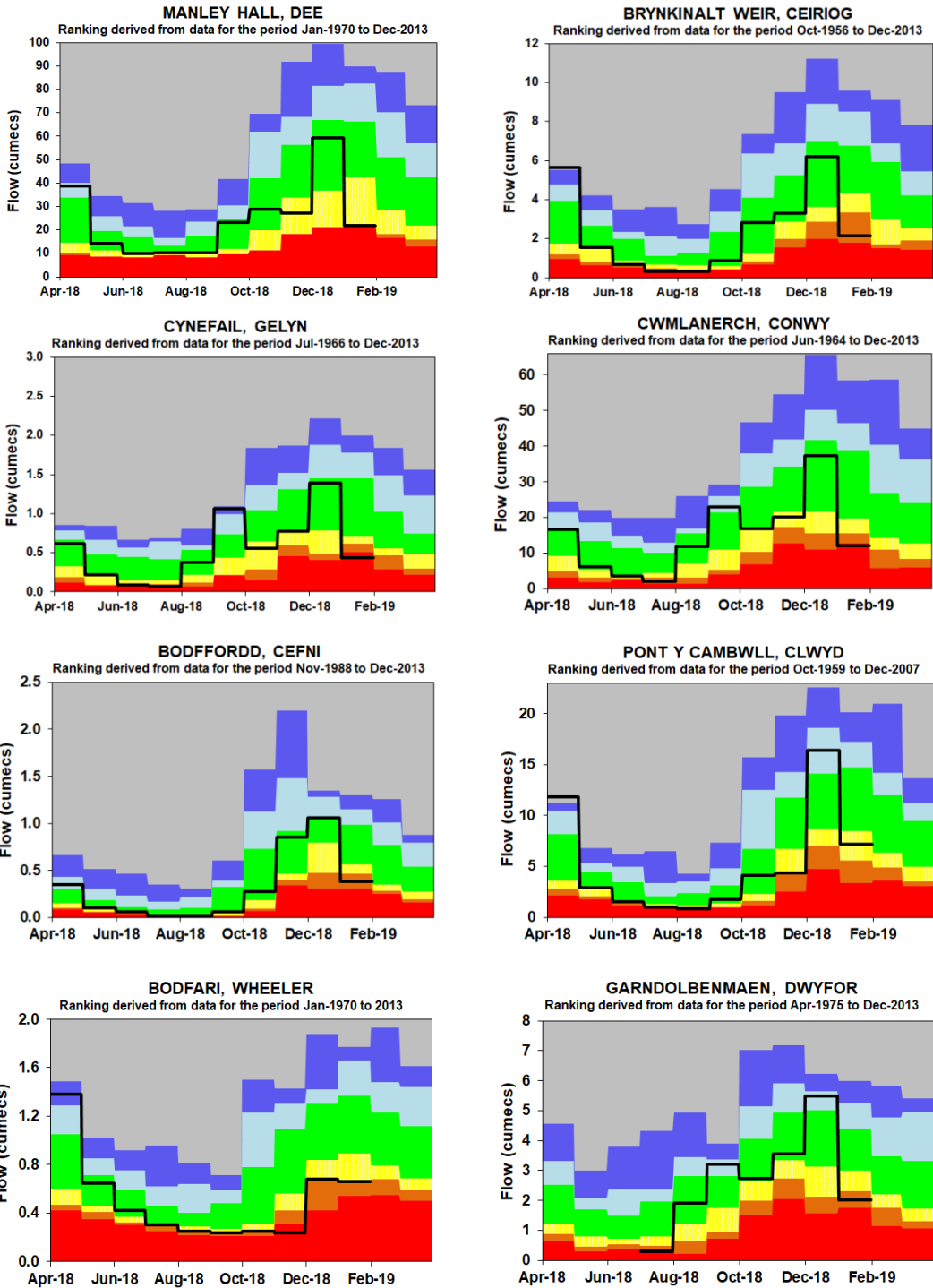
Figure 12: River Flow Charts: South East Wales



Monthly mean river flows for the last 10 months classed relative to the analysis of historic river levels (*Source: Natural Resources Wales*).

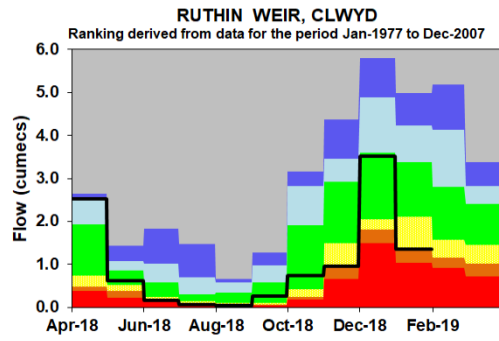
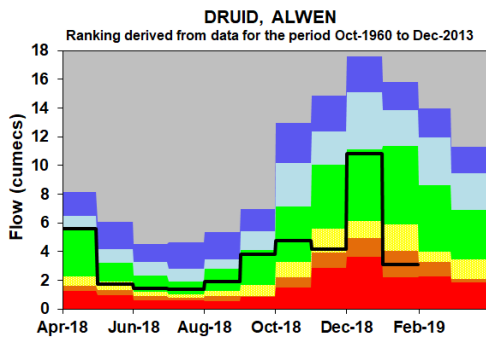
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**Figure 13: River Flow Charts: North Wales**

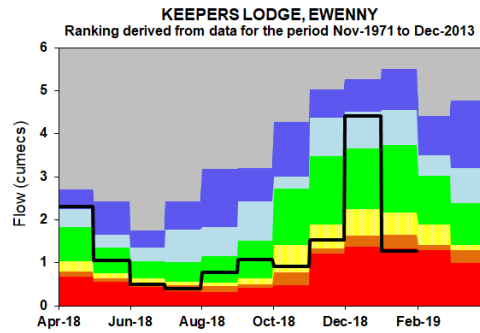
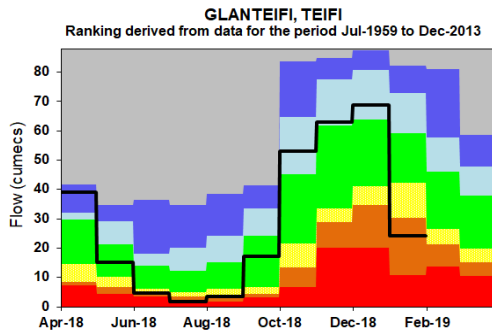
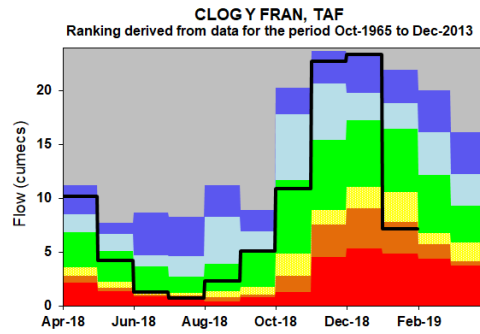
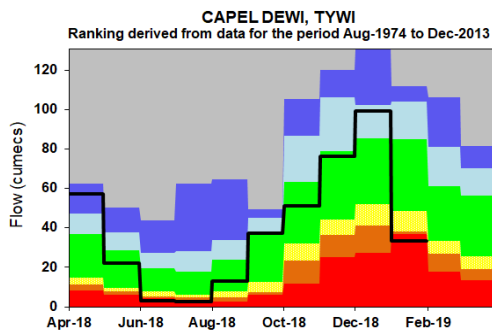
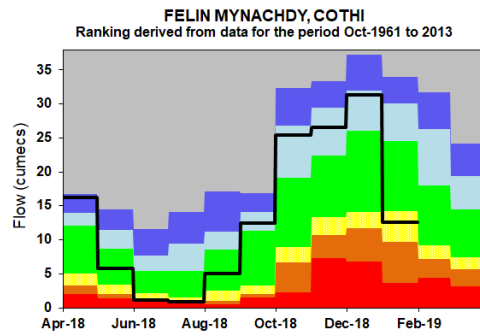
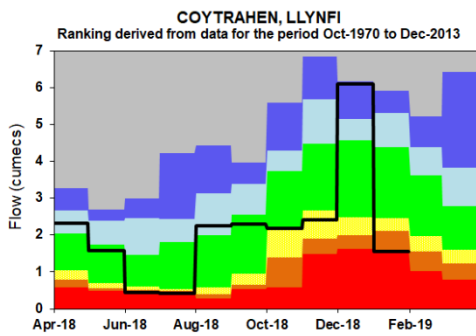


Monthly mean river flows for the last 10 months classed relative to the analysis of historic river levels (*Source: Natural Resources Wales*).  
 (Please note that there was no data for Garndolbenmaen for April to June 2018 due to maintenance work)

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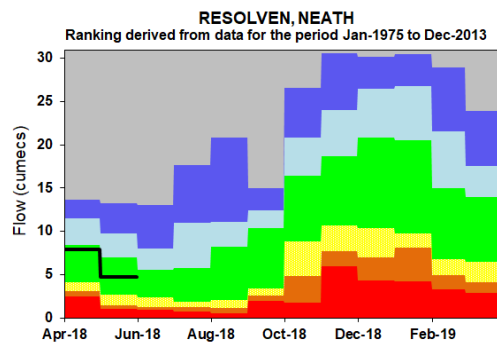
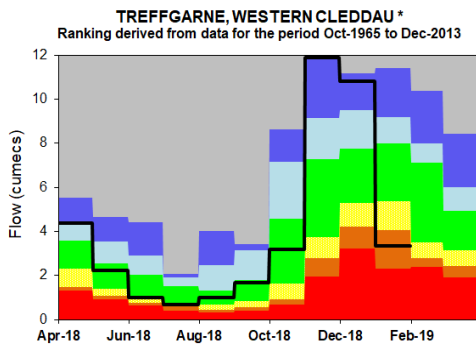
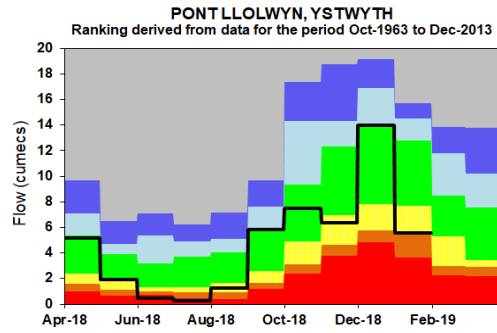
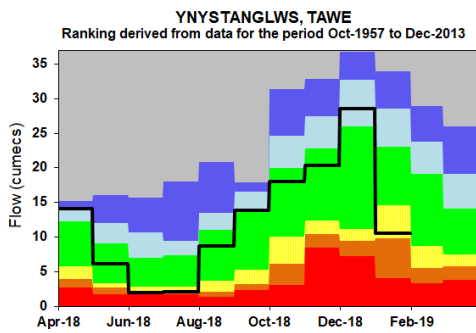
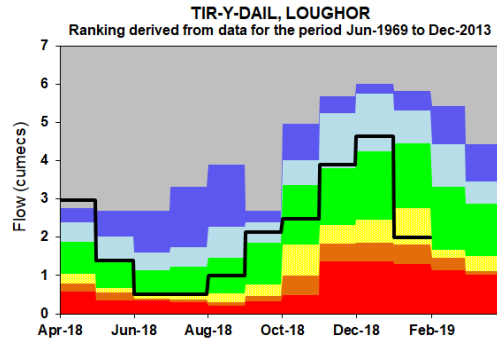
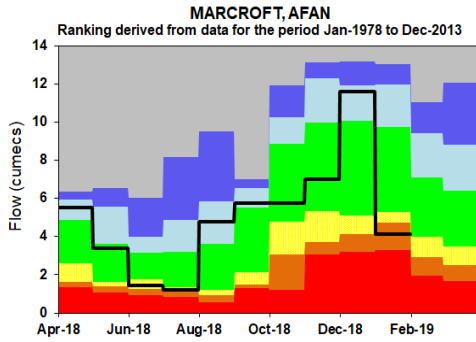
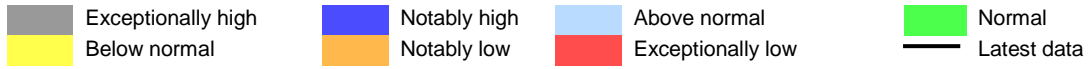


**Figure 14: River Flow Charts: South West Wales**





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**Monthly mean river flows for the last 10 months classed relative to the analysis of historic river levels. (Source: Natural Resources Wales).**

(\* Please note that for Treffgarne station the ranking bands were derived using scaled historical flows (1965-2003) from the downstream station at Prendergast Mill. There were no flow data from June 2018 to January 2019 for Resolven)

## Groundwater Levels

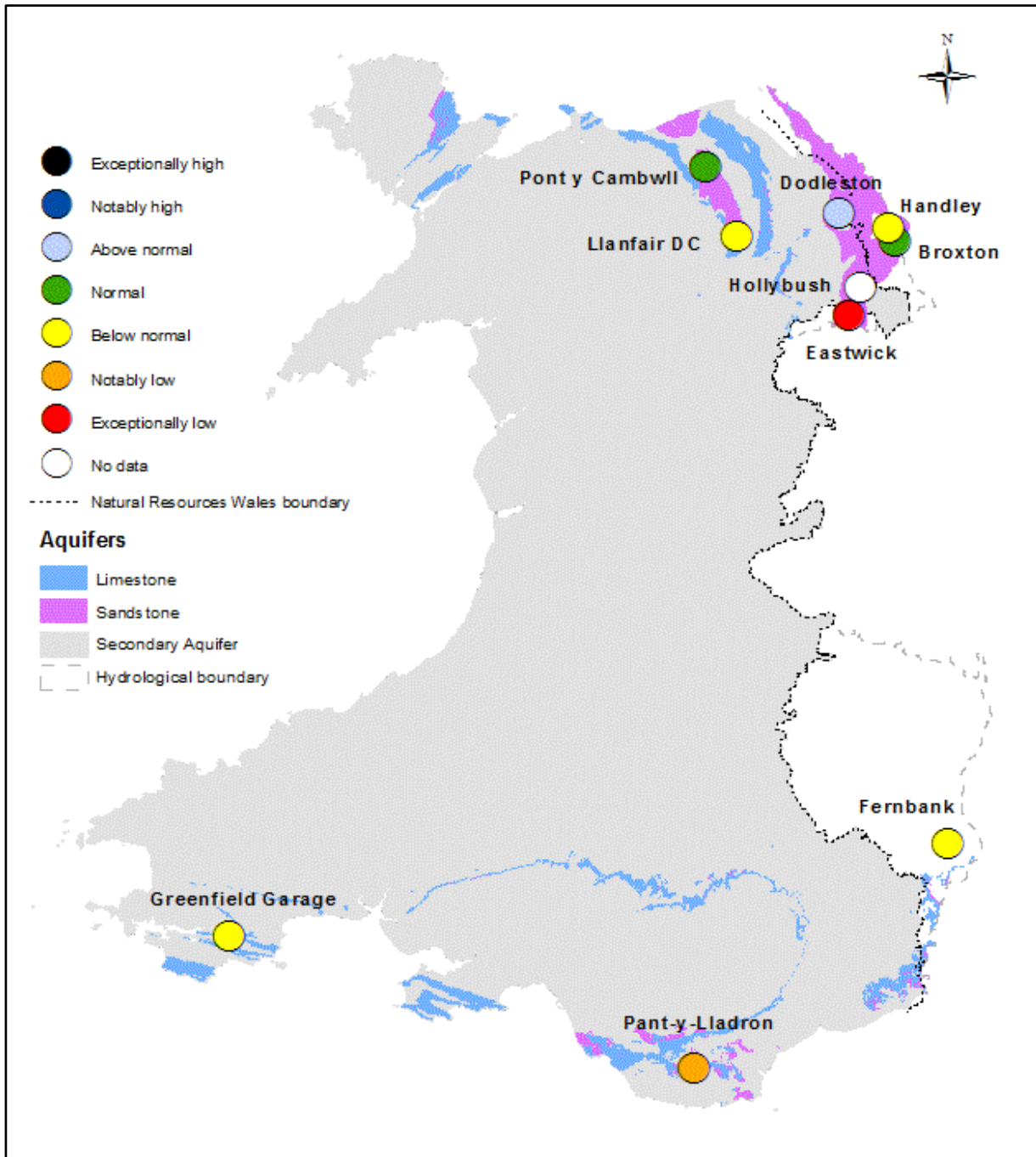
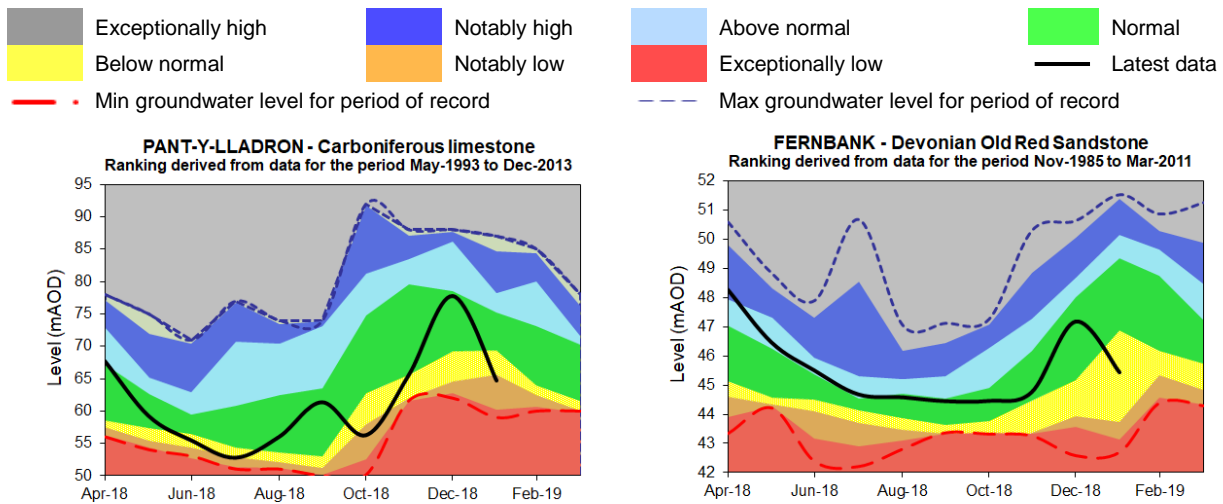


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic January groundwater levels (Source: Natural Resources Wales and Environment Agency).

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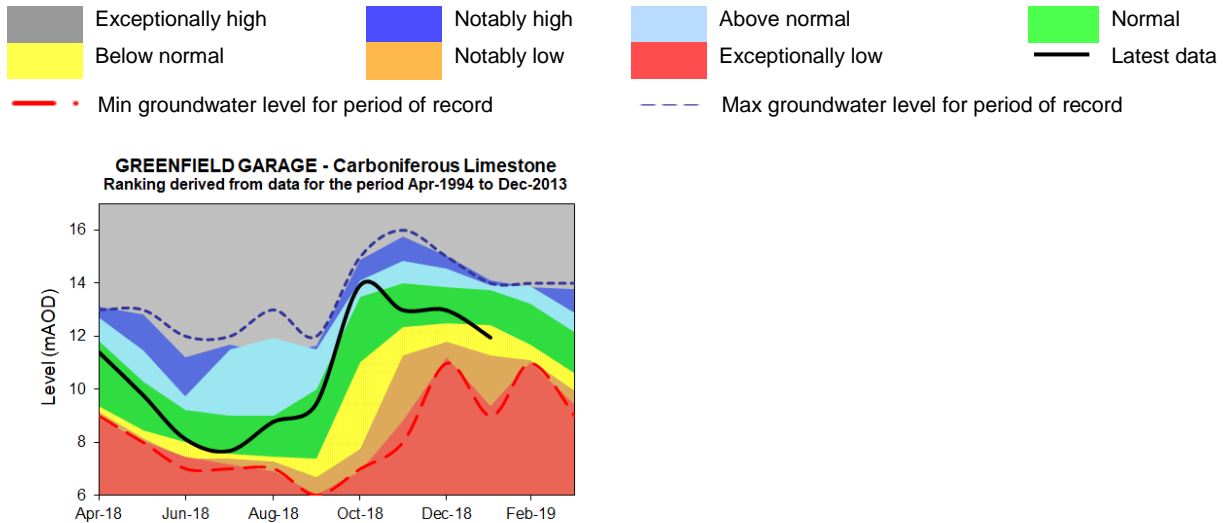
## Groundwater charts

**Figure 16: Groundwater level charts: South East Wales**



End of month groundwater levels for the past 10 months for index sites (Source: Natural Resources Wales). (Please note that data is not available for May and July 2018 for Pant-y-Lladron)

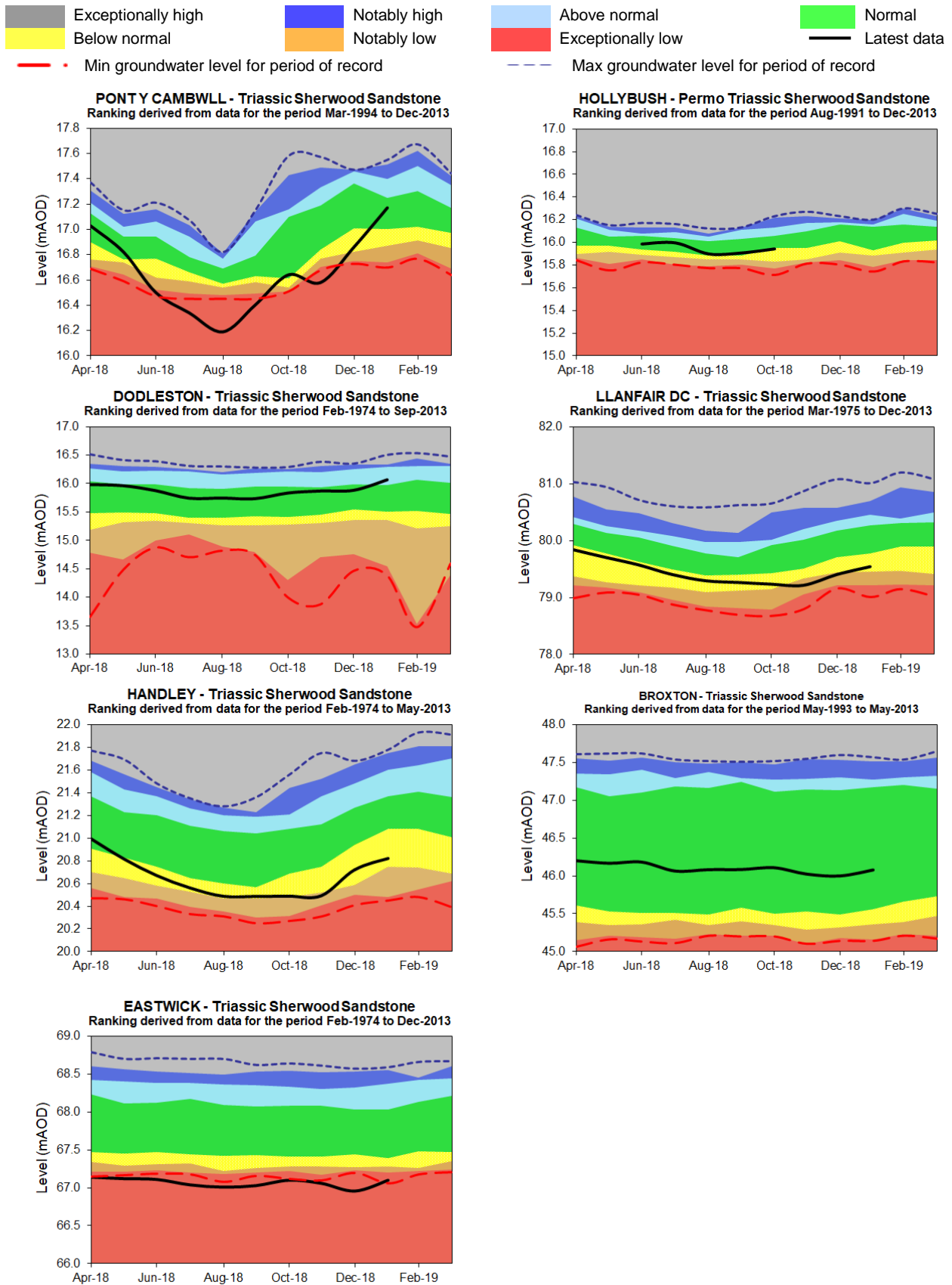
**Figure 17: Groundwater level charts: South West Wales**



End of month groundwater levels for the past 10 months for index sites (Source: Natural Resources Wales).

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**Figure 18: Groundwater level charts: North Wales**

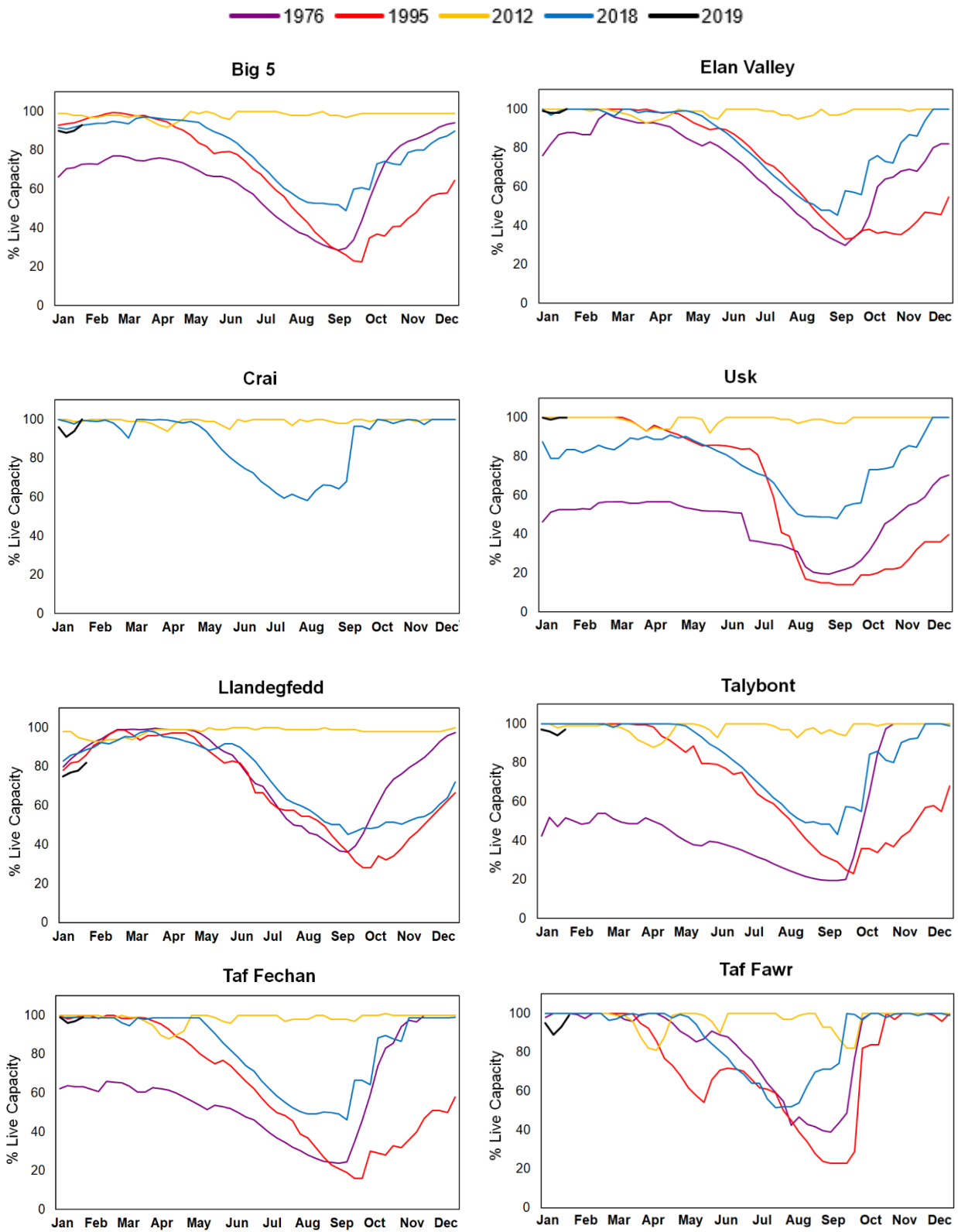


**End of month groundwater levels for the past 10 months for index sites (Source: Natural Resources Wales and Environment Agency).** (Please note that data is not available for May 2018 and November 2018 - January 2019 for Hollybush. The data for October 2018 for this station is taken on 9<sup>th</sup> October 2018)

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## Reservoir Storage

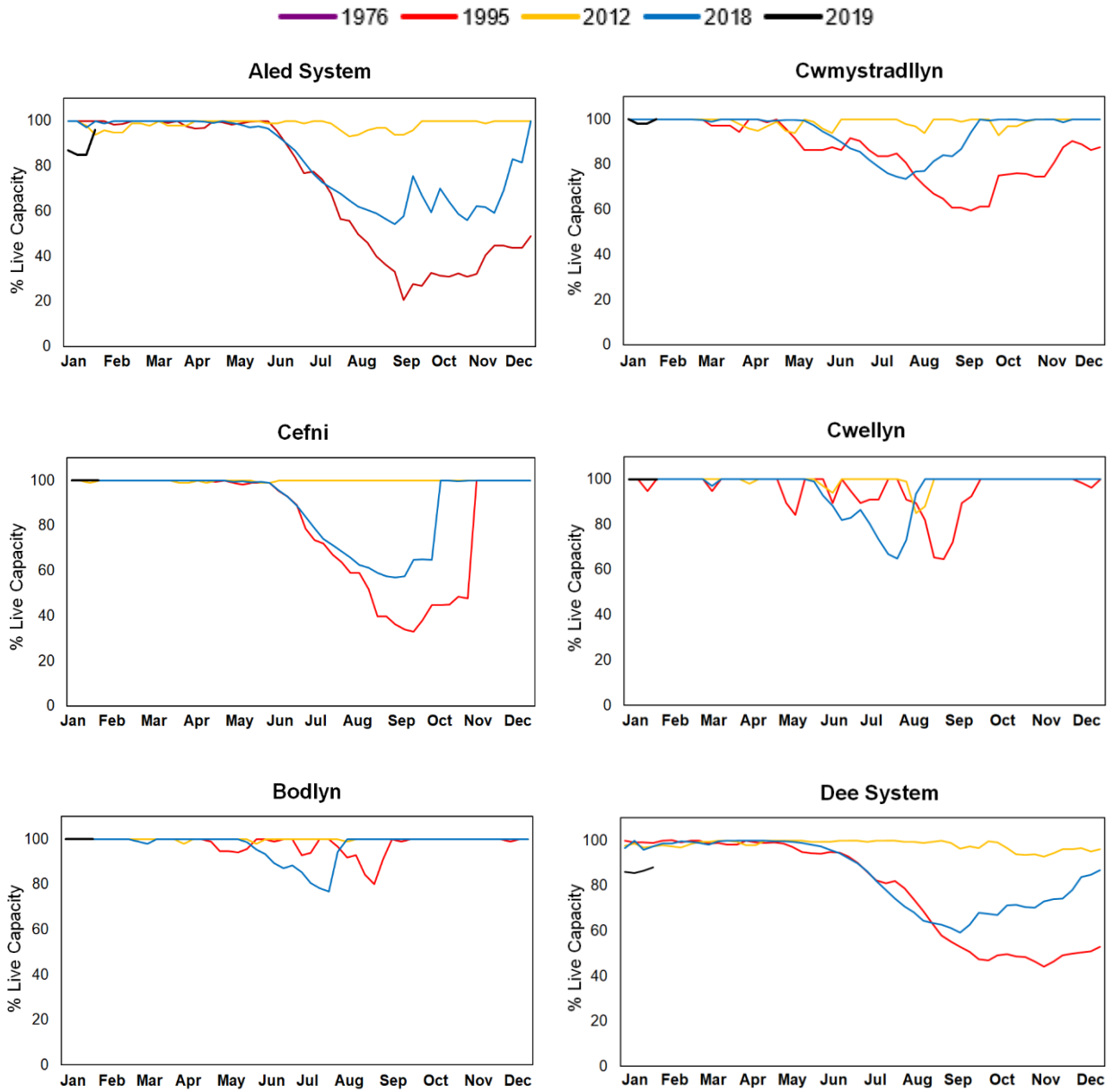
Figure 19: Reservoir charts: South East Wales



Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water)

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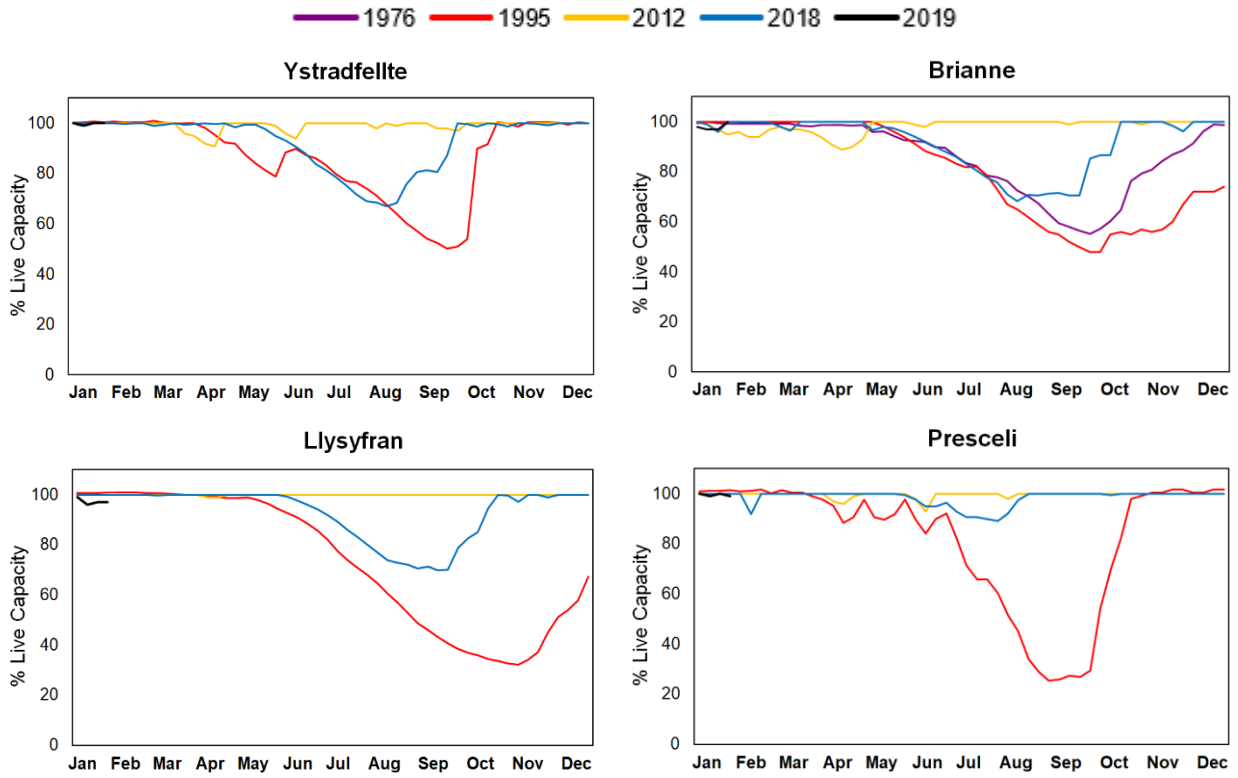
**Figure 20: Reservoirs charts: North Wales**



**Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water).**

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**Figure 21: Reservoirs charts: South West Wales**



Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water).

## 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
Meteorological Office Rainfall and Evaporation Calculating System (MORECS)	The Met Office provides climate data for grid squares measuring 40km by 40km across the UK using MORECS
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).