

## Natural Resources Wales

- The monthly rainfall total received for Wales during July was 106% of the Long Term Average (LTA, 1961-90). North, South West and South East Wales received 150%, 88% and 75% of the LTA, respectively.
- At the end of July, soil moisture deficit (SMD) values across Wales were between 6.2 and 114.3mm for all MORECS squares. The difference when compared to the long term average July (1961-90), ranged from -37.6mm (wetter) to 26.2mm (drier).
- For river flows in Wales, 8 out of 28 indicator sites which had flow data were classed as *Normal* for July. 14 sites were classed as *Above normal* and 2 sites were classed as *Notably high*. The remaining 4 sites were classed as *Exceptionally high*.
- The overall reservoir storage across all indicator sites was greater than 93% full at the end of July and all reservoirs were within normal operating ranges.

### Rainfall\*

The monthly rainfall total received for Wales was 106% of the LTA for July. The percentage of rainfall recorded in catchments compared with the long term average (1961-90) across Wales was between 27% (Lower Wye) and 202% (Dwyfor). There was a trend from the north west (higher rainfall) to the south east (lower rainfall). The rainfall total for Wales was 5mm more than the July LTA. For South East, South West and North Wales the rainfall totals were 75%, 88% and 150% of the LTA, respectively.

Rainfall Map [National](#)

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 23 MORECS squares had SMD values between 6.2 and 114.3mm. 18 out of 23 squares had SMD values which were less than the long-term average (wetter) and only 5 squares had SMD values which were greater than the long-term average (drier)

SMD Map [National](#)

SMD Charts [Compare to LTA](#)

All data are provisional and may be subject to revision.

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## River Flows

River flows at 15 sites (out of 28 sites which had flow data ) were classed as *Normal*. 14 sites were classed as *Above normal* and 2 sites as *Notably high*. The remaining 4 sites were classed as *Exceptionally high*.

**North:** Flows in the area ranged from 88% (River Cefni at Bodffordd) to 291% (River Dwyfor at Garndolbenmaen) of the July LTA Values.

**South East:** Flows in the area ranged from 64% (River Lugg at Butts Bridge) to 125% (River Wye at Redbrook) of the July LTA values.

**South West:** The river flows within this area ranged from 95% (River Ewenny at Keepers lodge) to 259% (River Ystwyth at Pont Llolwyn) of the July LTA values.

River Flow Map            [National](#)  
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 July at all indicator sites (10 sites) were classed between *Notably low* (Greenfield Garage) and *Exceptionally high* (Hollybush). 2 sites were classed as *Normal* (Handley and Broxton Obs) and 4 sites were classed as *Above normal* (Pant-y-Lladron, Fernbank, Llanfair DC Obs and Dodleston Obs). The remaining 2 sites were classed as *Below normal* (Pont y Cambwll and Eastwick).

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

## Reservoir Storage

At the end of July almost all the indicator reservoirs (16 out of 18) were greater than 93% full.

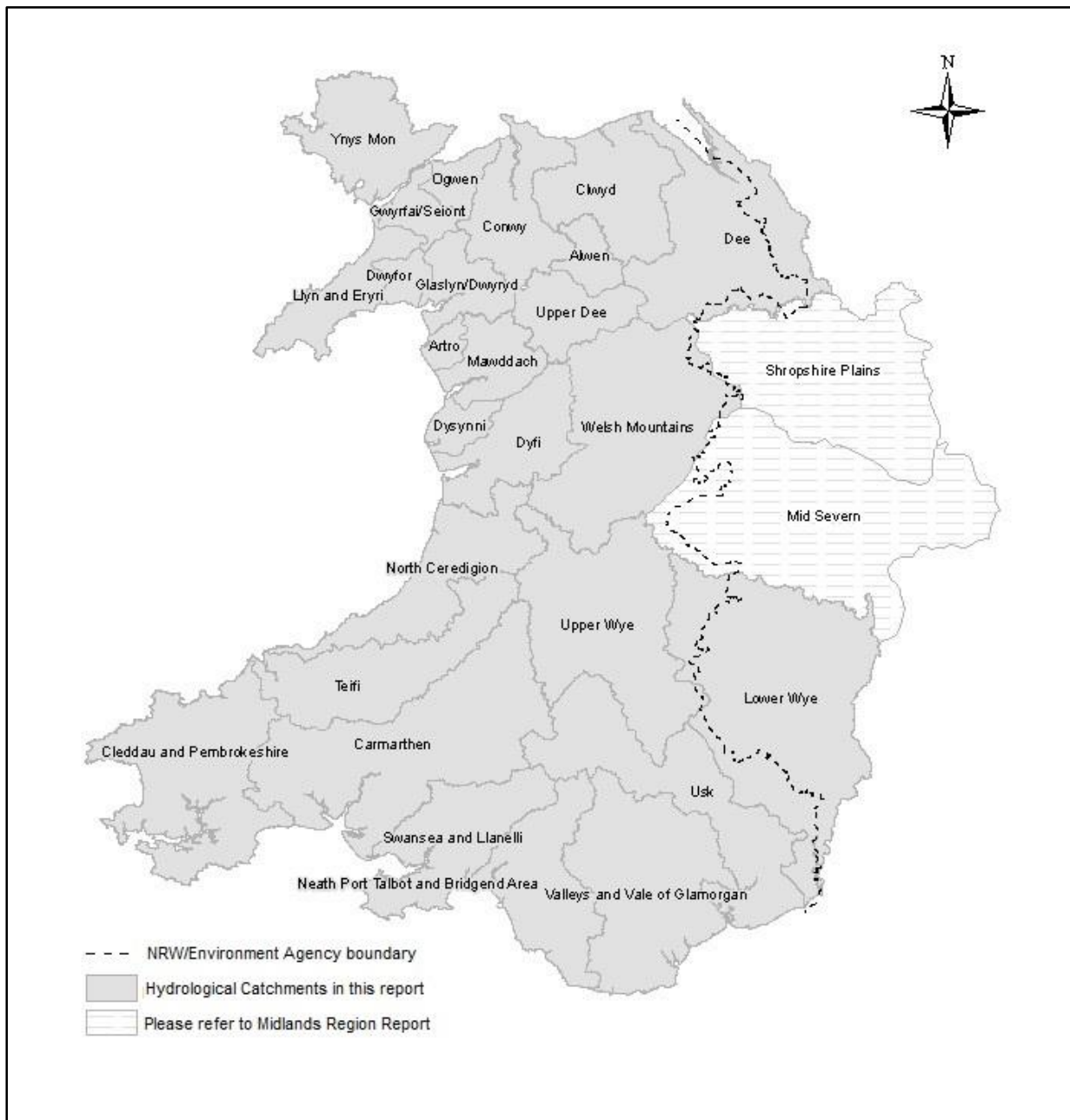
Reservoir Charts        [South East Wales](#) [North Wales](#) [South West Wales](#)

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

Author: Zhong Zhang Telephone: 03000 654521

[Return to Summary](#)

## 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

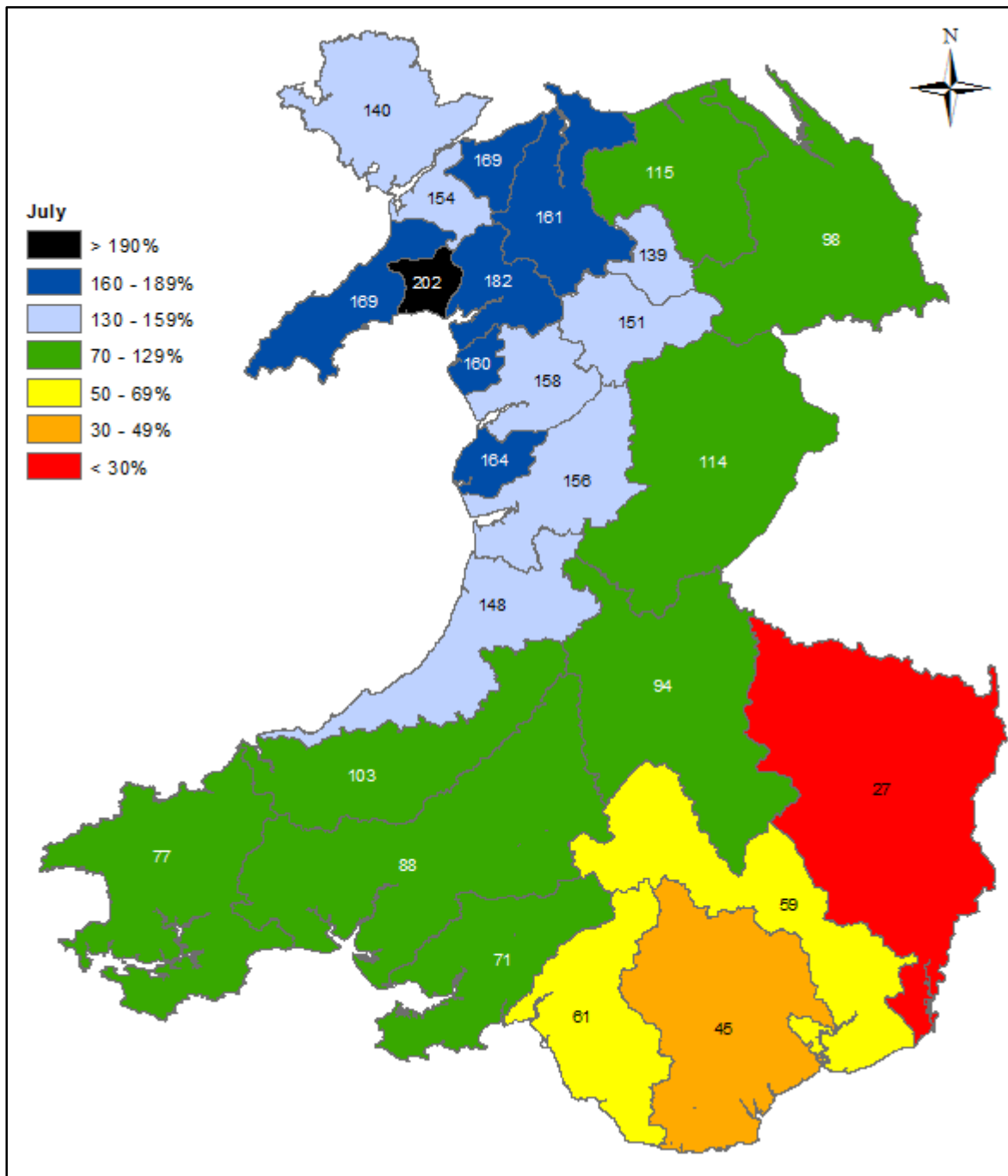
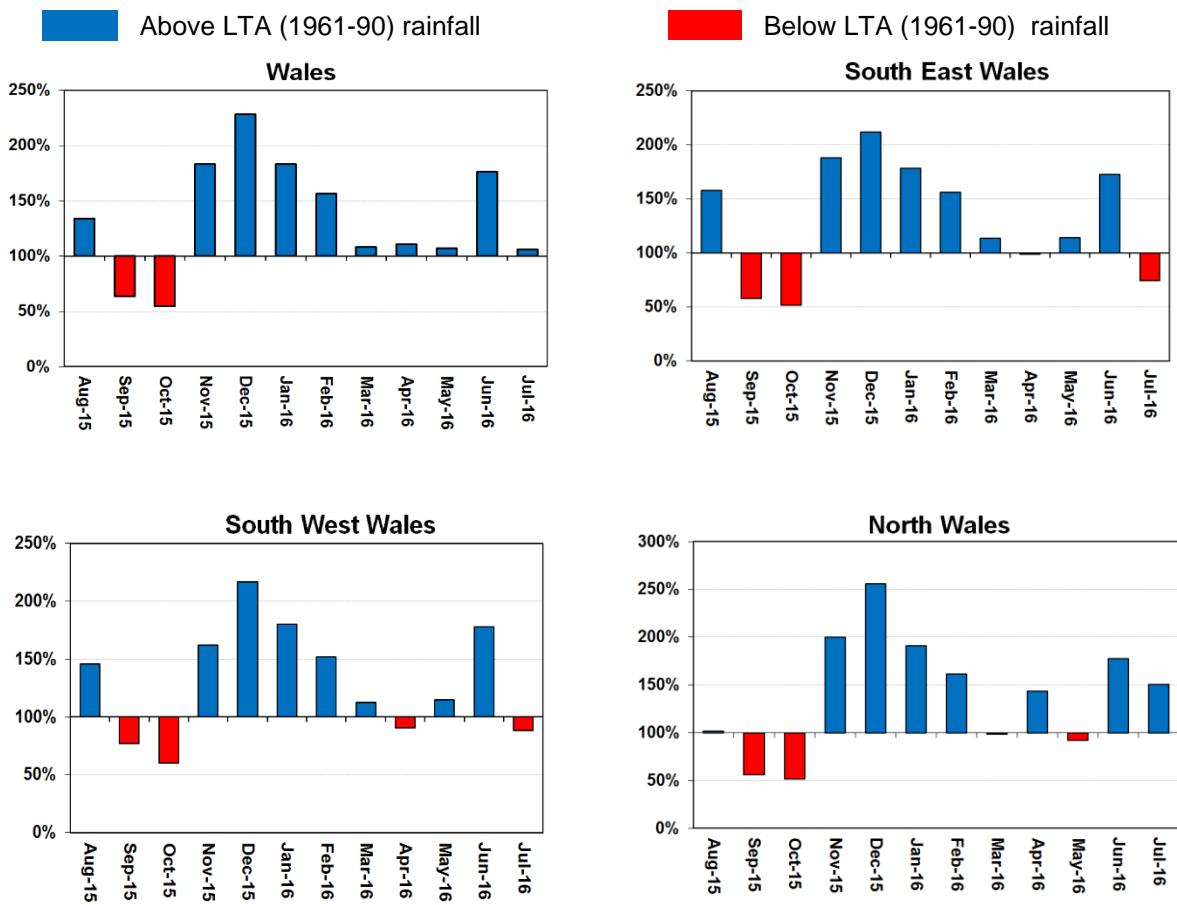


Figure 2: Calculated catchment average July rainfall totals as a percentage of the 1961-90 July long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

## Rainfall Charts

Figure 3: Rainfall Charts: National and Areas

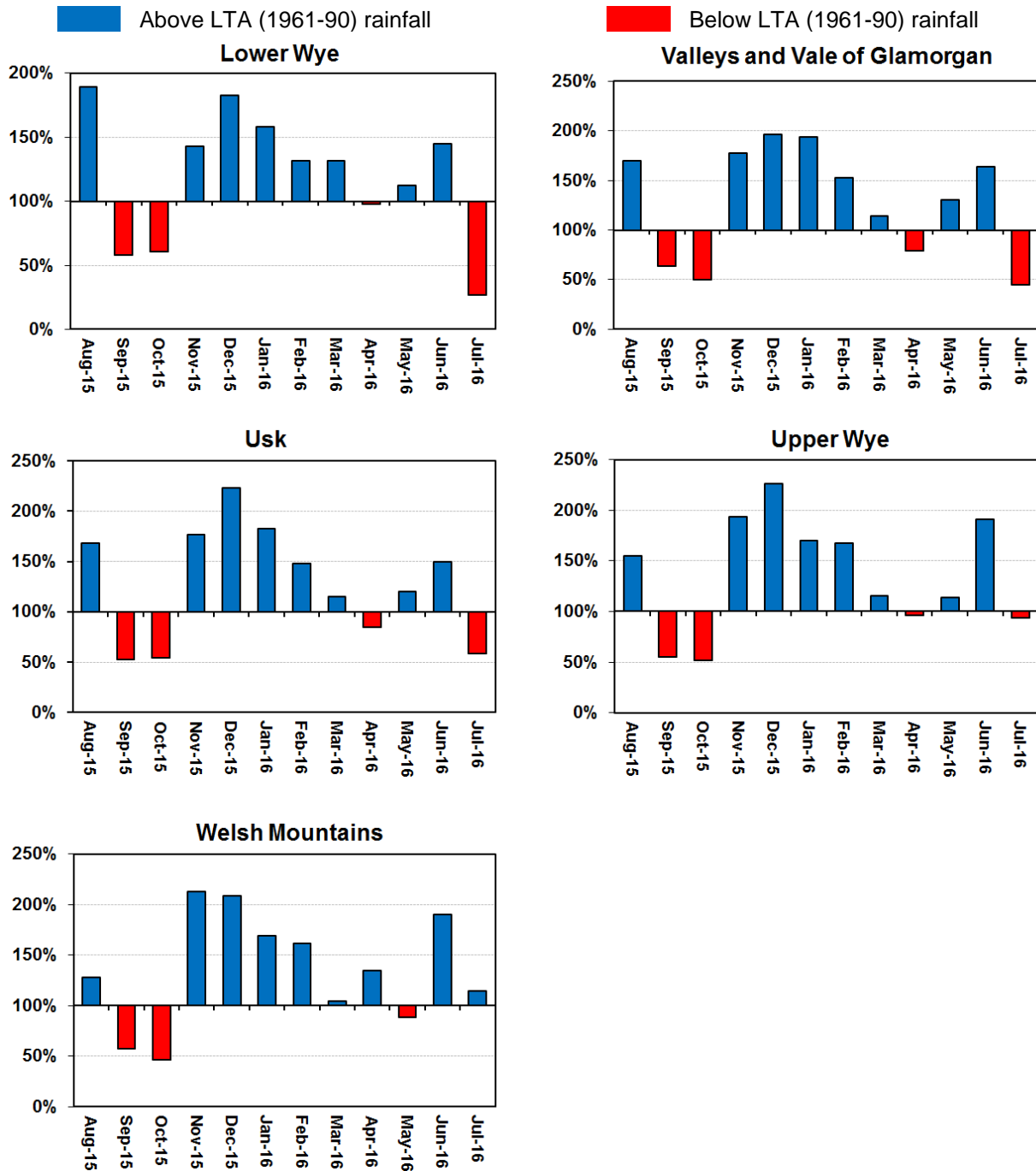


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

All data are provisional and Jul be subject to revision.

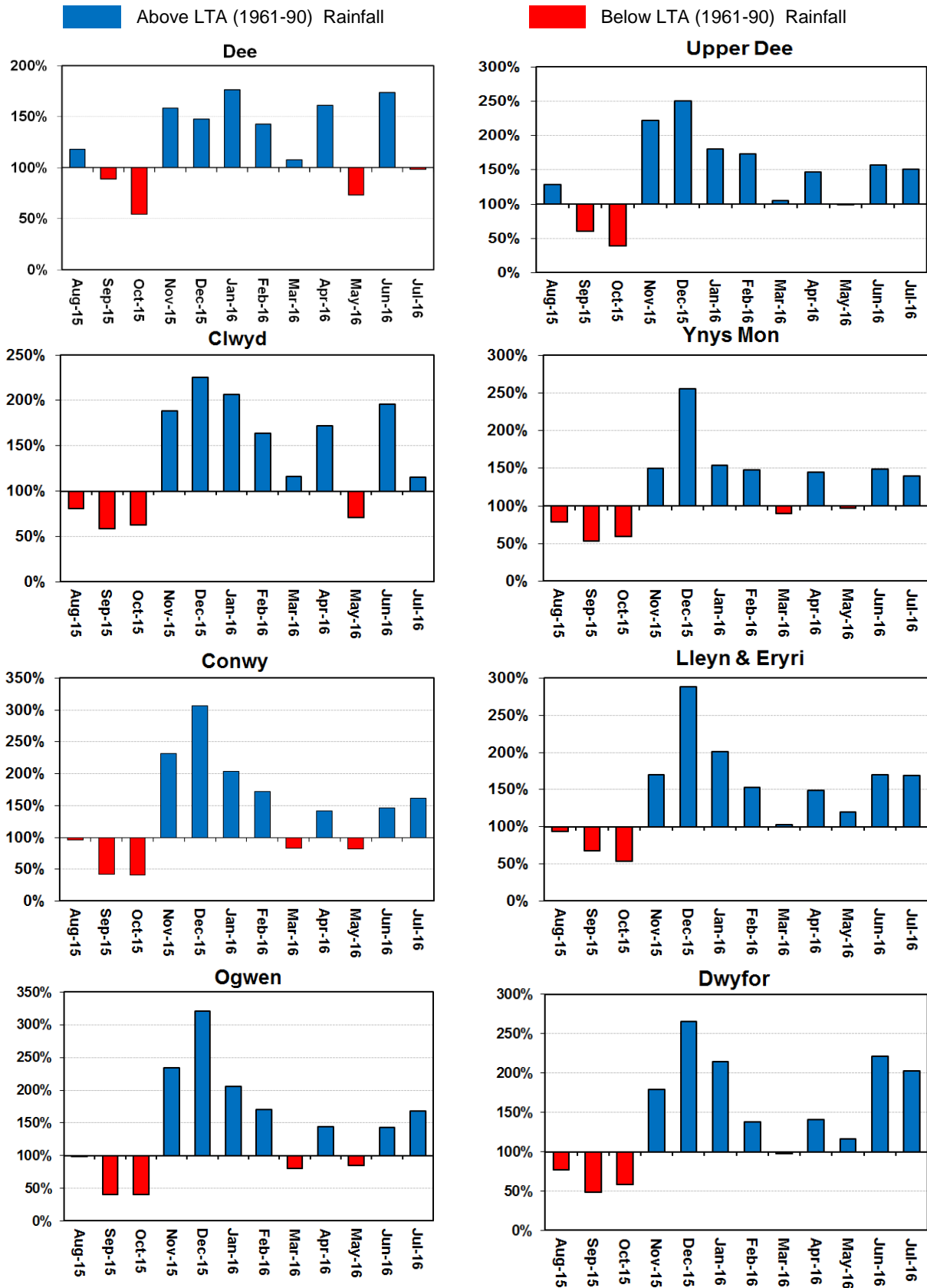
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**Figure 4: Rainfall Charts: South East Wales**



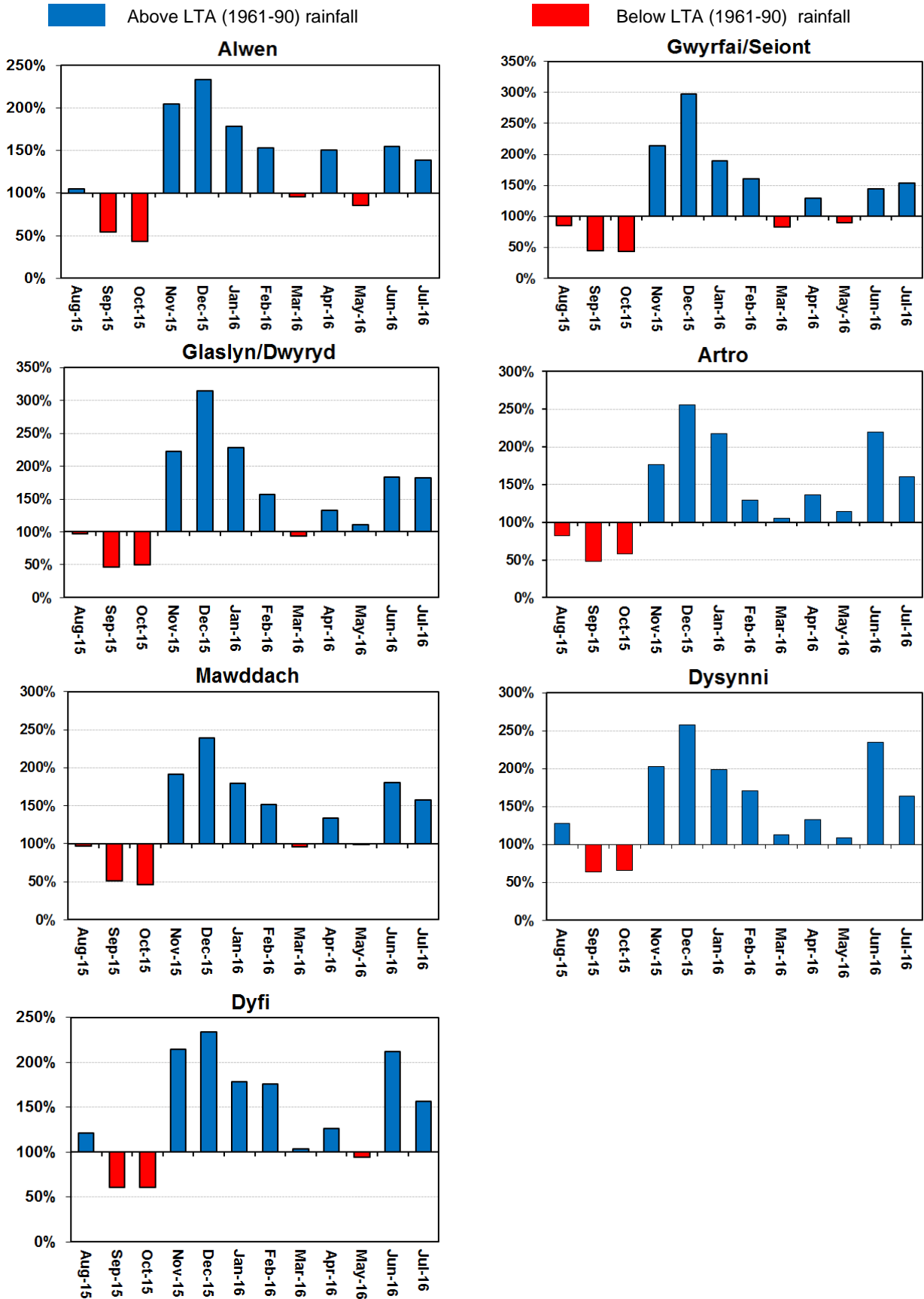
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for South East Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

**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).

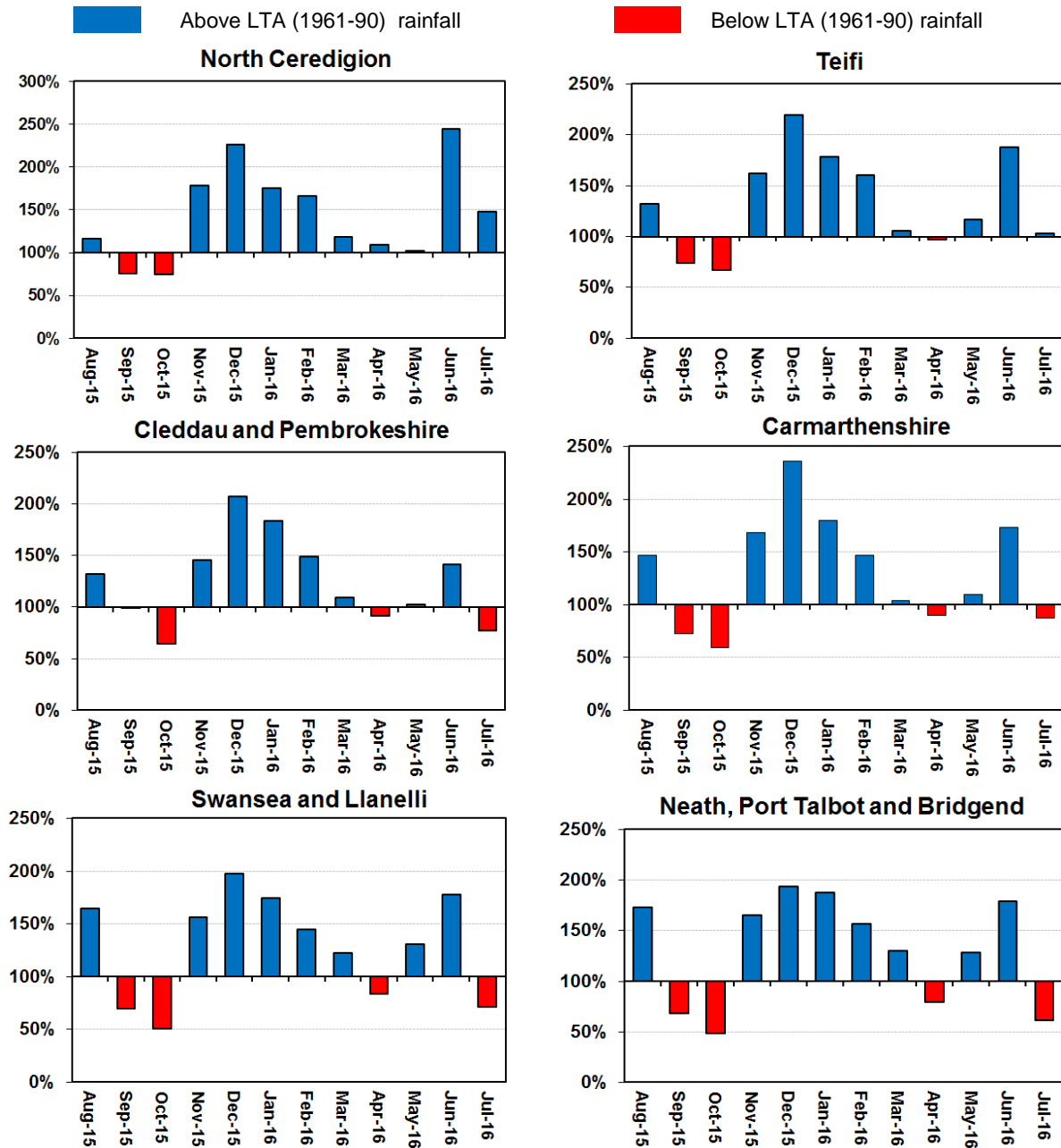
[Return to Summary](#)



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)

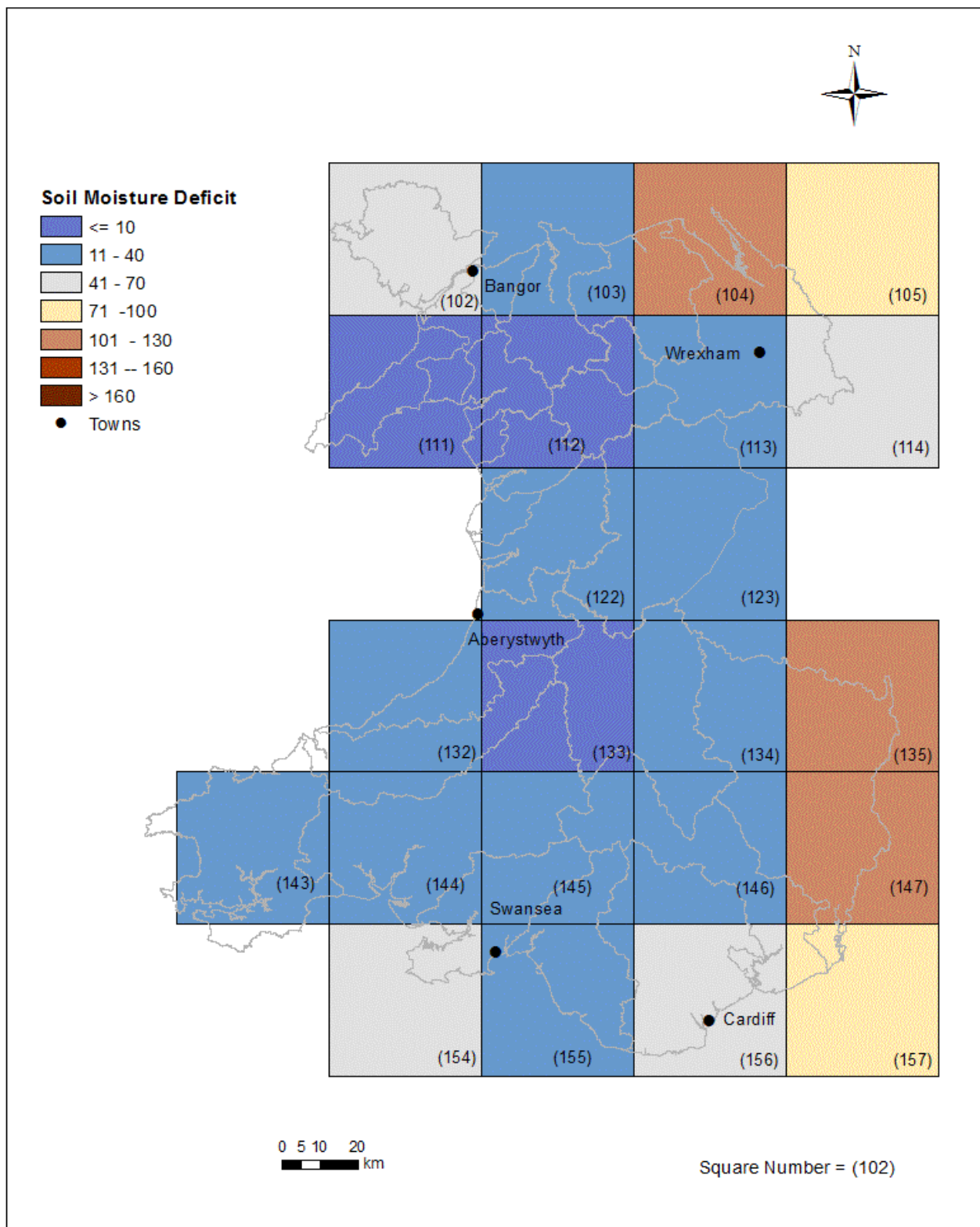


Figure 7: MORECS soil moisture deficits (mm) for July for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

[Return to Summary](#)

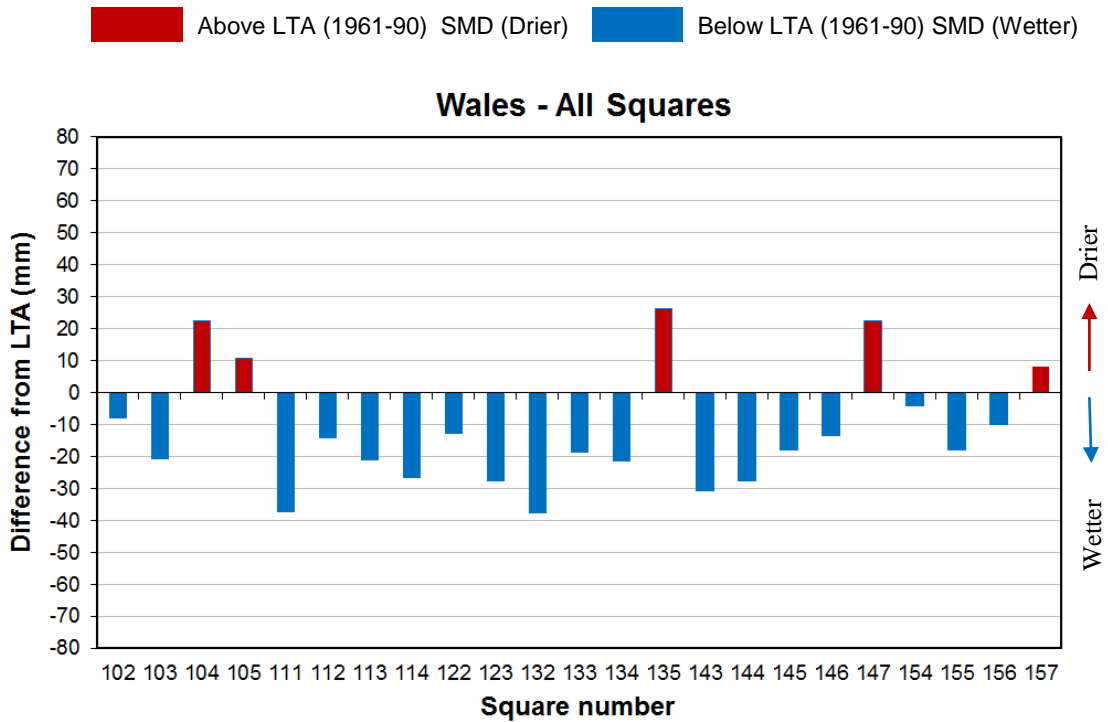


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for July for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

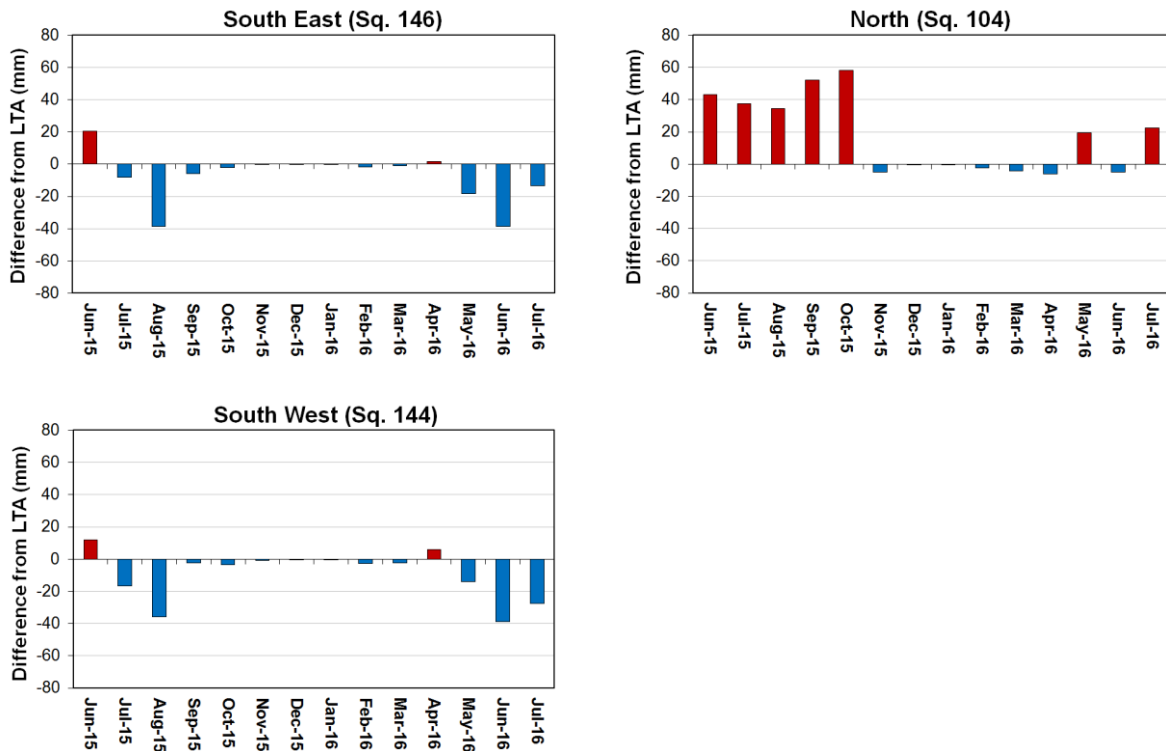


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales)

## River Flow

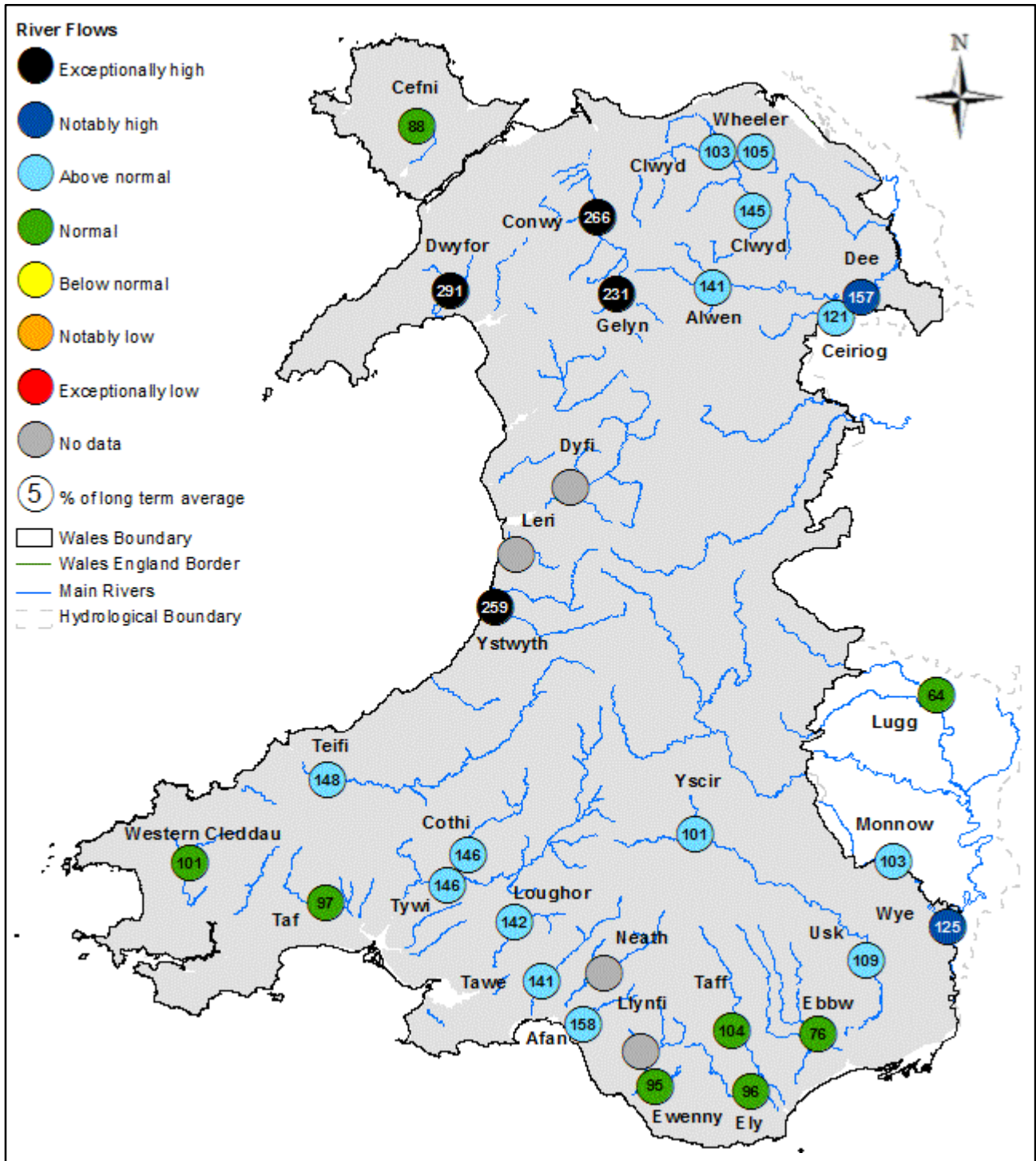


Figure 10: Monthly mean river flow for July, classed relative to analysis of historic July monthly means (Source: Natural Resources Wales).

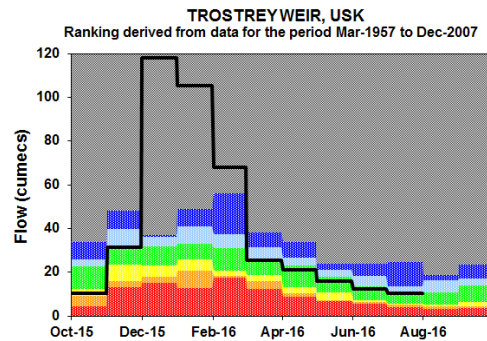
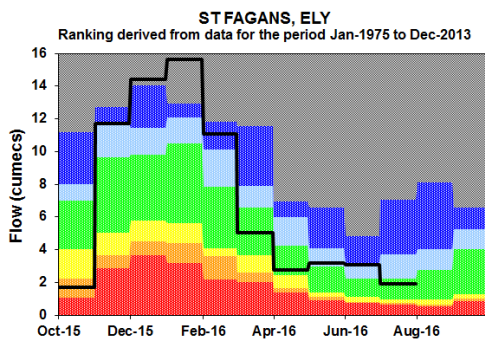
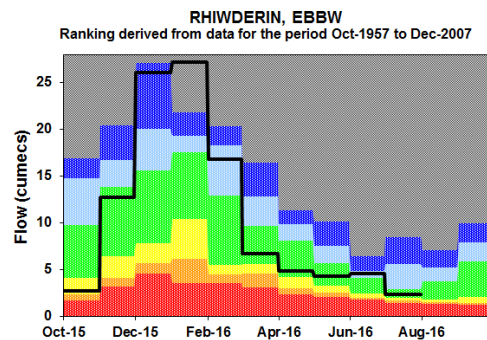
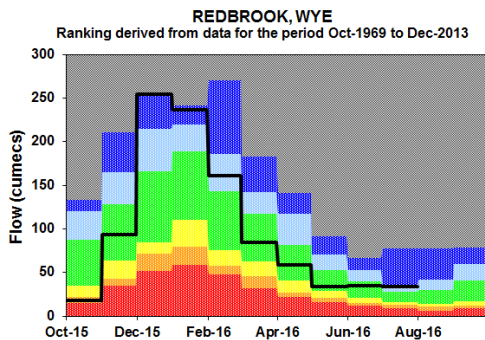
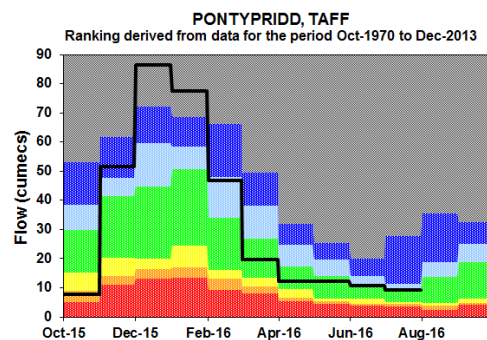
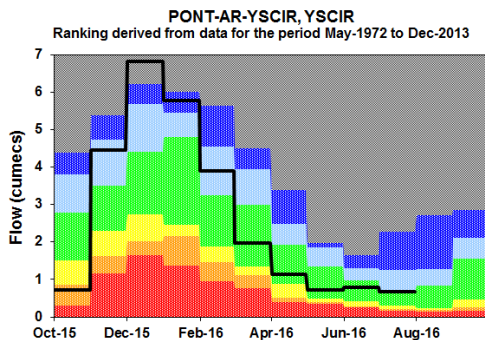
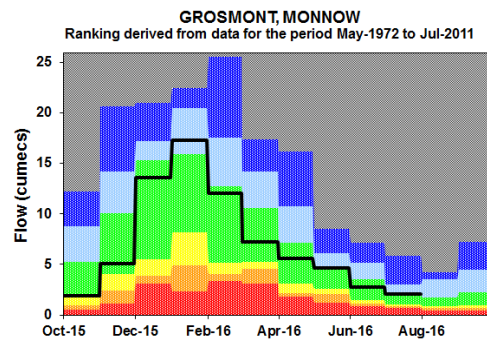
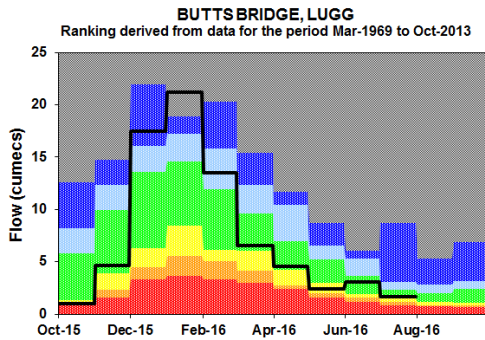
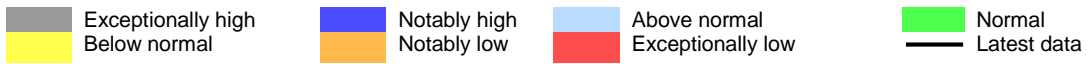
SITE NAME	RIVER	July 2016			July 2015		July LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Monthly Min (m3/s)	Monthly Max (m3/s)
<b>River Flow Sites : South East Area</b>									
Butts Bridge	Lugg	Normal	64%	1.68	34%	0.897	2.64	0.64	23.20
Grosmont	Monnow	Above normal	103%	2.04	70%	1.38	1.98	0.44	13.20
Pont ar Yscir	Yscir	Above normal	101%	0.68	56%	0.37	0.67	0.15	3.13
Pontypridd	Taff	Normal	104%	9.37	77%	6.96	9.03	2.59	36.60
Redbrook	Wye	Notably high	125%	34.00	60%	16.37	27.27	7.43	174.00
Rhiwderin	Ebbw	Normal	76%	2.35	57%	1.79	3.11	1.26	10.90
St Fagans	Ely	Normal	96%	1.93	111%	2.23	2.02	0.47	7.69
Trostrey Weir	Usk	Above normal	109%	10.20	65%	6.14	9.37	3.39	32.10
<b>River Flow Sites : North Area</b>									
Bodfari	Wheeler	Above normal	105%	0.46	70%	0.31	0.44	0.23	1.34
Bodffordd	Cefni	Normal	88%	0.07	50%	0.04	0.08	0.01	0.44
Brynkinalt Weir	Ceiriog	Above normal	121%	1.40	40%	0.46	1.16	0.28	6.37
Cwmlanerch	Conwy	Exceptionally high	266%	21.90	124%	10.22	8.22	0.65	30.80
Cynefail	Gelyn	Exceptionally high	231%	0.74	106%	0.34	0.32	0.04	1.05
Dol y Bont	Leri	N/A	N/A	N/A	N/A	N/A	0.96	0.13	3.50
Druid	Alwen	Above normal	141%	2.60	55%	1.01	1.85	0.53	10.30
Dyfi bridge	Dyfi	N/A	N/A	N/A	N/A	N/A	9.48	0.82	42.50
Garndolbenmaen	Dwyfor	Exceptionally high	291%	4.51	128%	1.99	1.55	0.10	5.88
Manley Hall	Dee	Notably high	157%	21.60	76%	10.45	13.79	8.52	58.40
Pont y Cambwll	Clwyd	Above normal	103%	2.30	47%	1.05	2.23	0.69	13.00
Ruthin Weir	Clwyd	Above normal	145%	0.58	25%	0.1	0.40	0.05	3.47
<b>River Flow Sites : South West Area</b>									
Capel Dewi	Tywi	Above normal	146%	23.20	54%	8.58	15.90	2.75	70.40
Clog y Fran	Taf	Normal	97%	2.49	74%	1.89	2.57	0.38	12.40
Coytrahen	Llynfi	N/A	N/A	N/A	95%	1.31	1.38	0.24	4.53
Felin Mynachdy	Cothi	Above normal	146%	6.63	44%	1.99	4.54	0.38	20.80
Glanteifi	Teifi	Above normal	148%	15.50	68%	7.19	10.50	1.82	50.90
Keepers Lodge	Ewenny	Normal	95%	0.90	92%	0.87	0.95	0.30	2.90
Marcroft	Afan	Above normal	158%	5.09	100%	3.23	3.22	0.56	9.99
Pont Llolwyn	Ystwyth	Exceptionally high	259%	7.37	120%	3.41	2.85	0.38	12.60
Treffgarne *	Western Cleddau	Normal	101%	1.12	N/A	N/A	1.11	0.33	2.62
Resolven	Neath	N/A	N/A	N/A	78%	3.73	4.81	0.41	19.00
Tir-y-Dail	Loughor	Above normal	142%	1.46	74%	0.76	1.03	0.20	4.49
Ynystanglws	Tawe	Above normal	141%	8.97	110%	6.97	6.34	1.03	27.80

**Figure 11: Monthly mean river flow for July with comparison against previous year expressed as a percentage of the July long term average and classed relative to analysis of historic July 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.)**



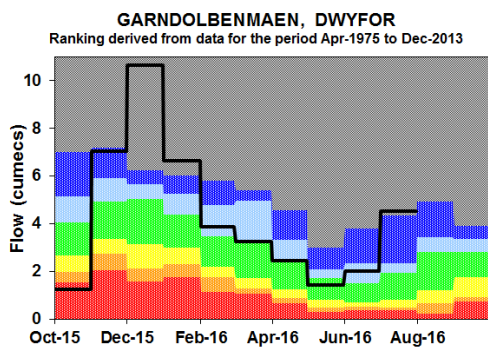
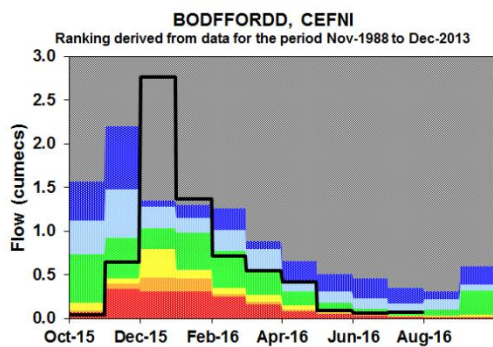
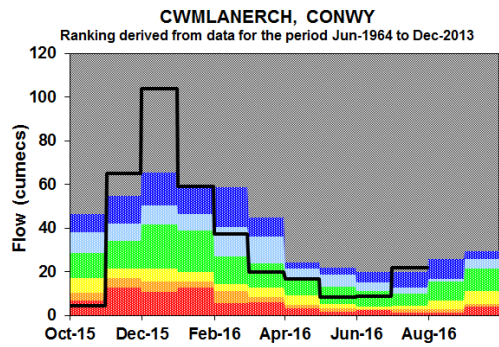
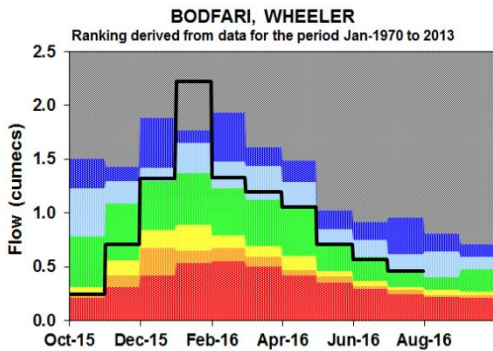
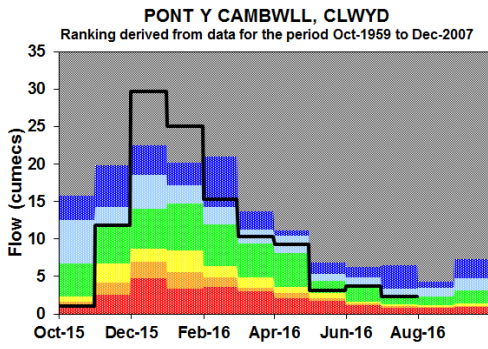
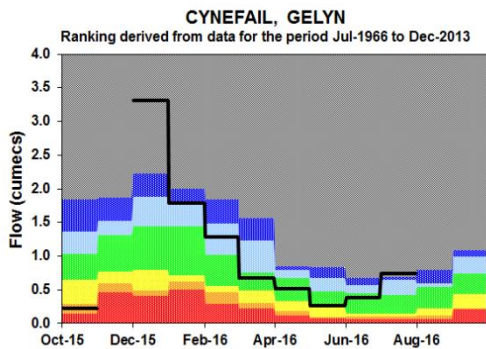
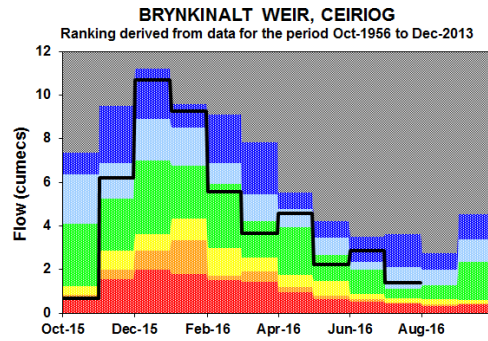
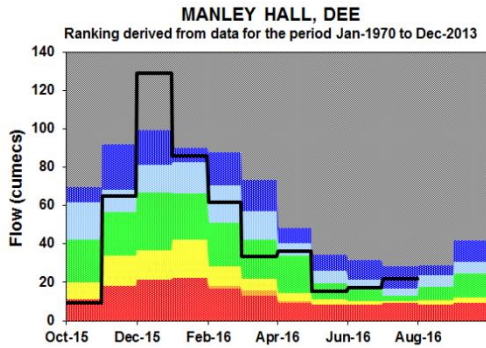
## River Flow Charts

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*).

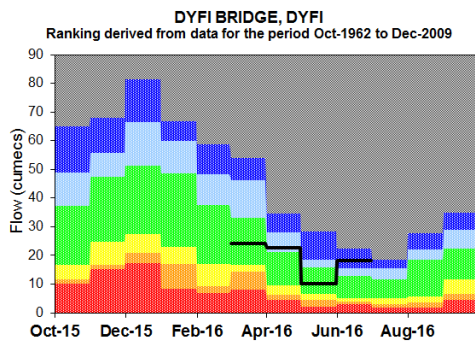
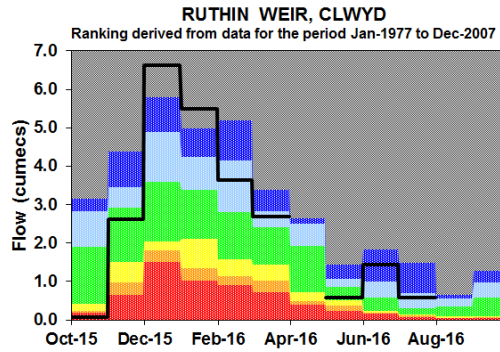
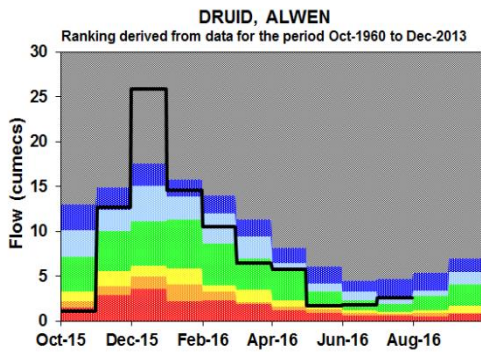
### Figure 13: River Flow Charts: North Wales



**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 available for River Gelyn at Cynefail in November 2015)

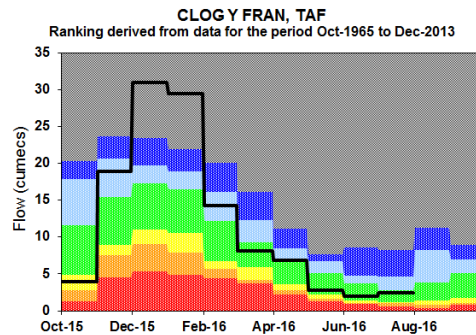
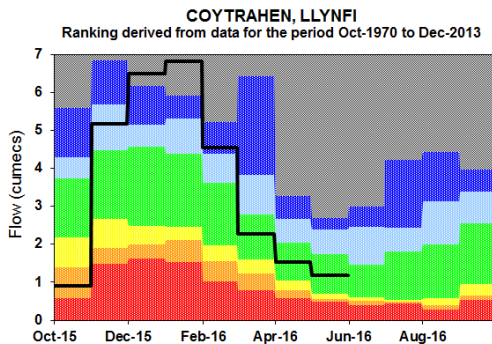
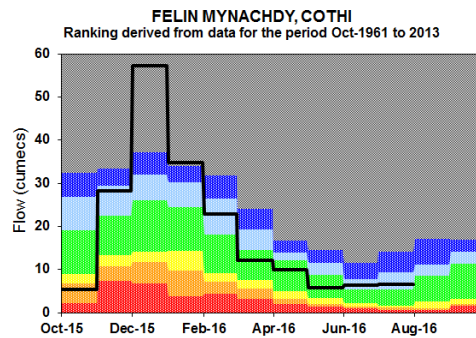
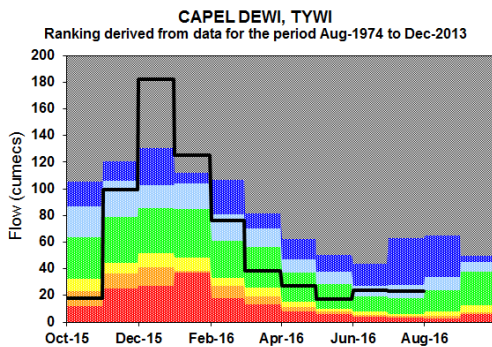


[Return to Summary](#)



(Please note that there were no data available for River Dyfi at Dyfi Bridge before March 2016 and for River Clwyd at Ruthin Weir for April 2016)

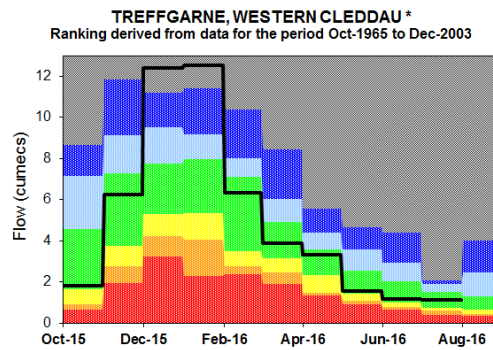
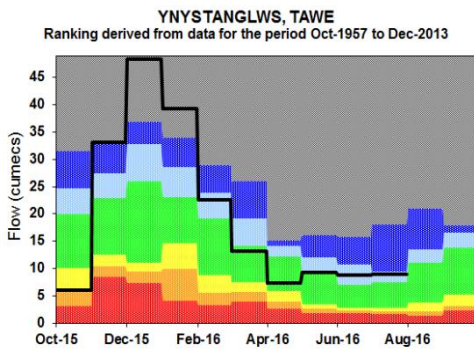
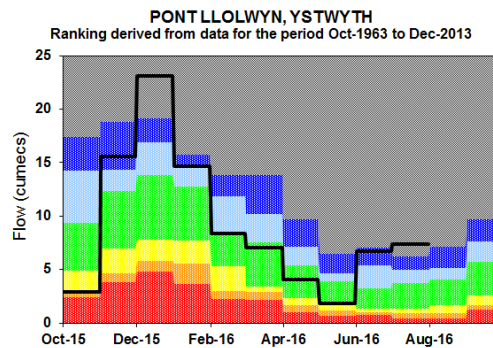
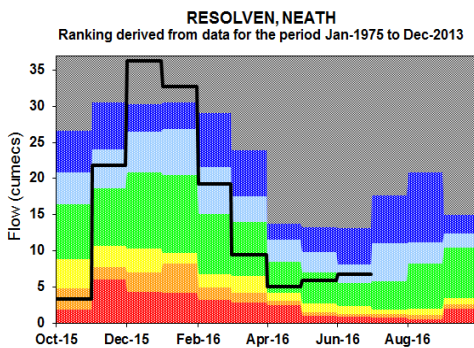
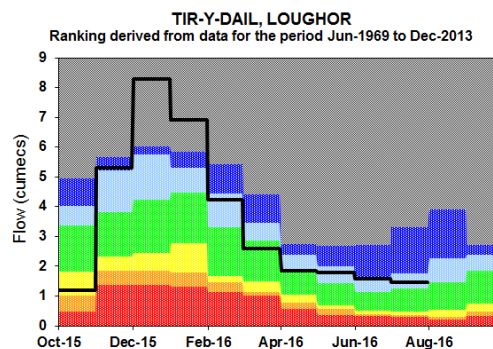
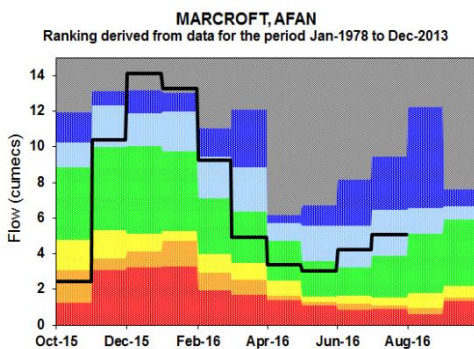
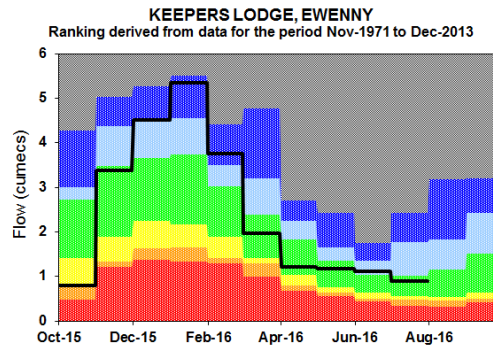
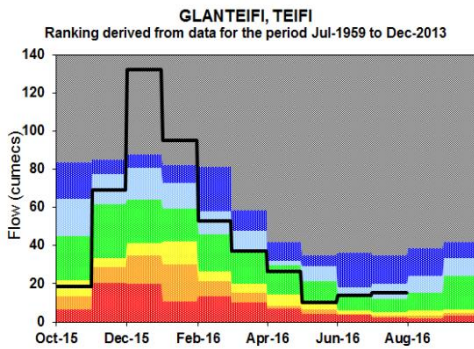
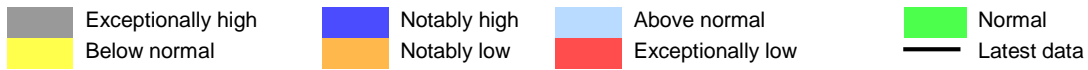
**Figure 14: River Flow Charts: South West Wales**



(Please note that there was no data for Coytrahen for June and July 2016 due to the river works)



[Return to Summary](#)



**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 data for Resolven for July 2016 due to river works )

## Groundwater Levels

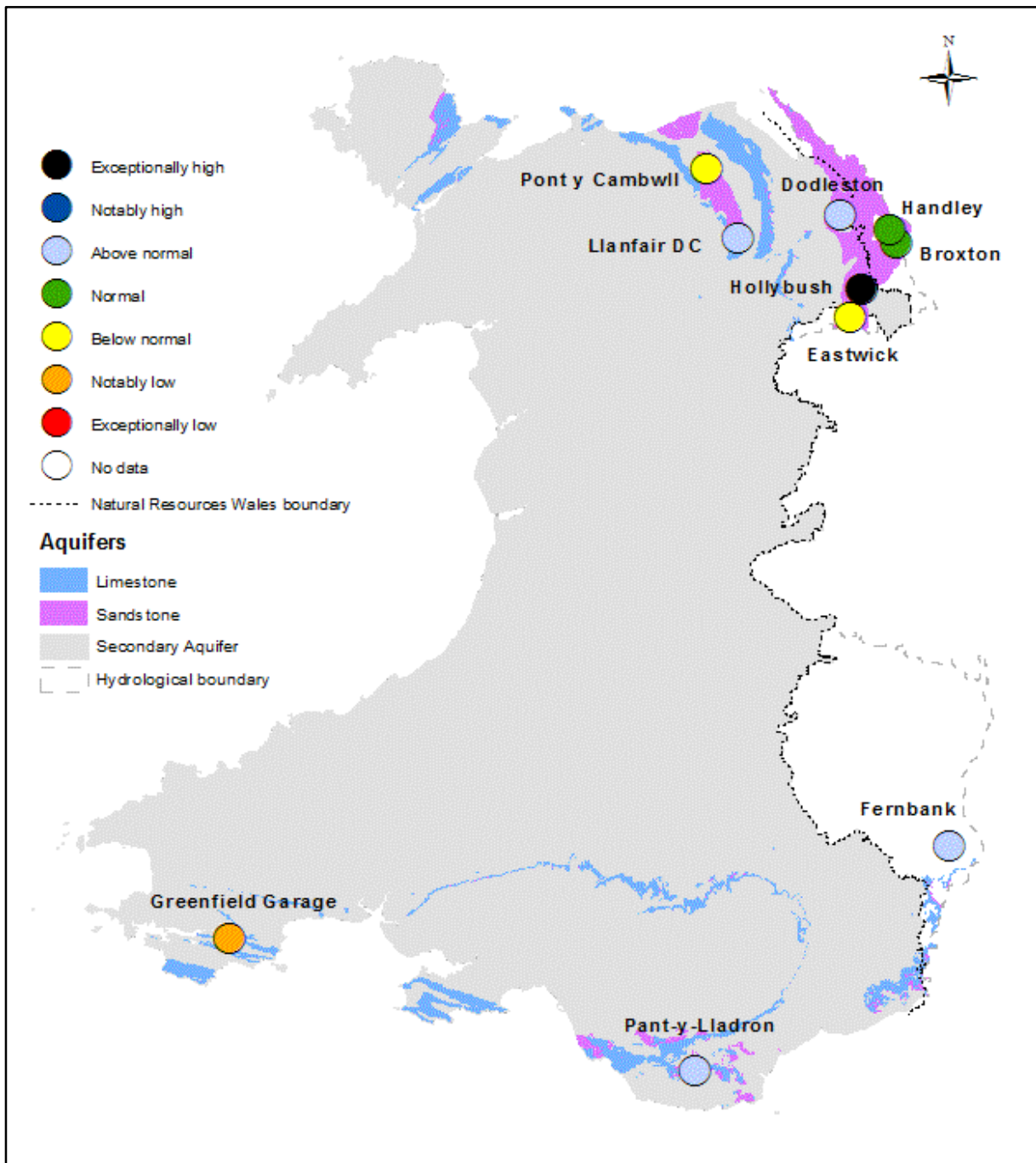
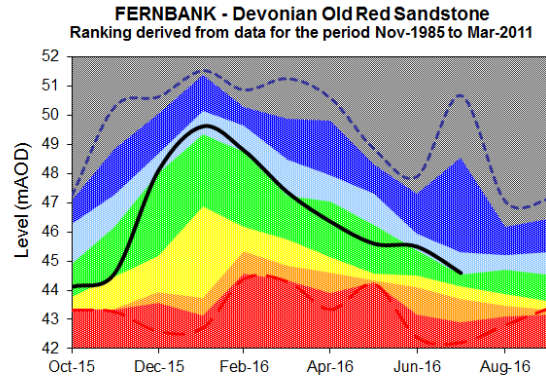
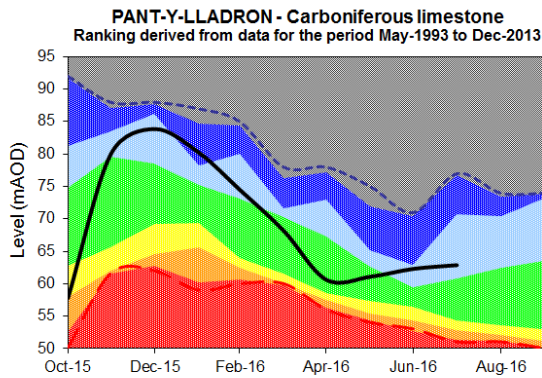
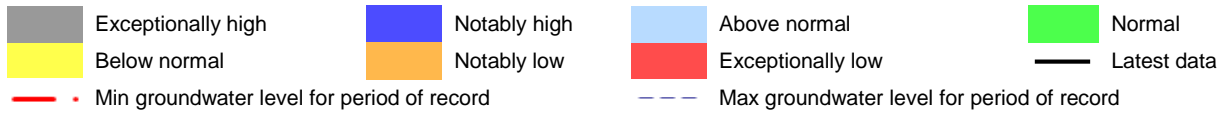


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic July groundwater levels (Source: Natural Resources Wales and Environment Agency).

[Return to Summary](#)

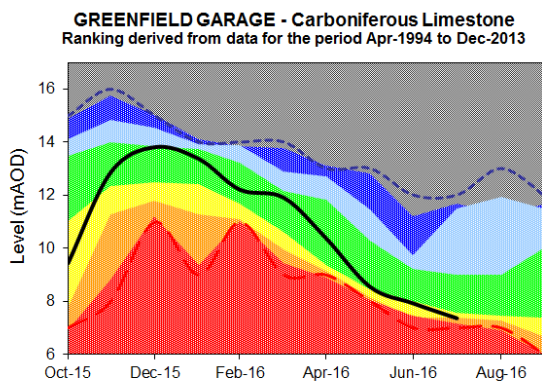
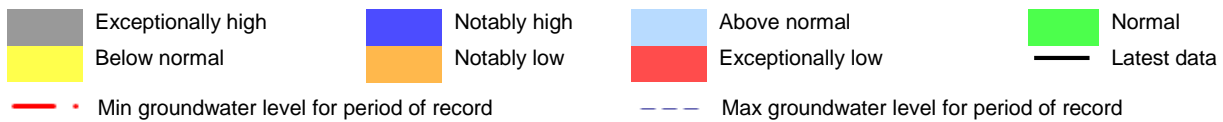
## Groundwater charts

**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).

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

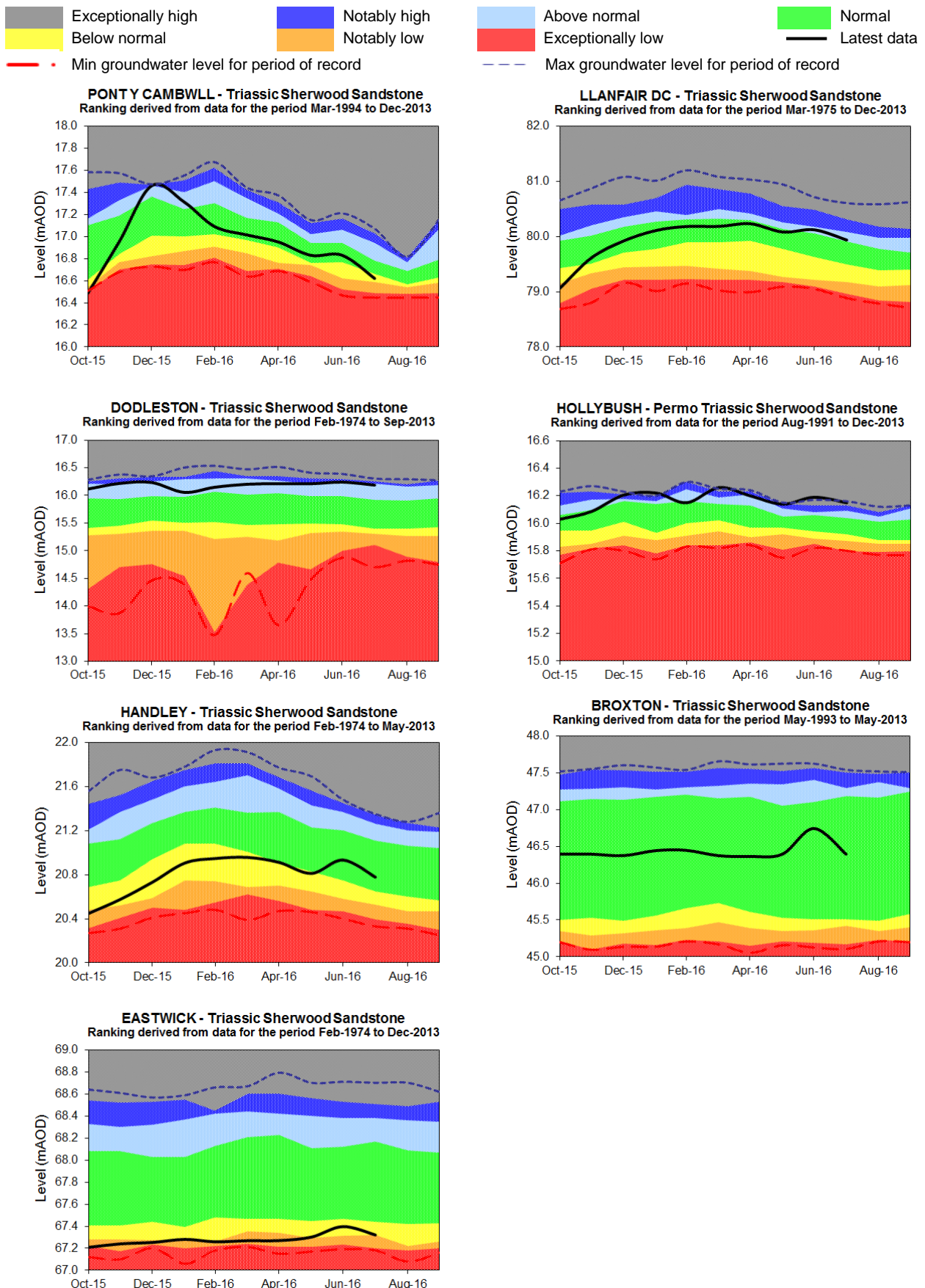


End of month groundwater levels for the past 10 months for index sites (Source: Natural Resources Wales).



[Return to Summary](#)

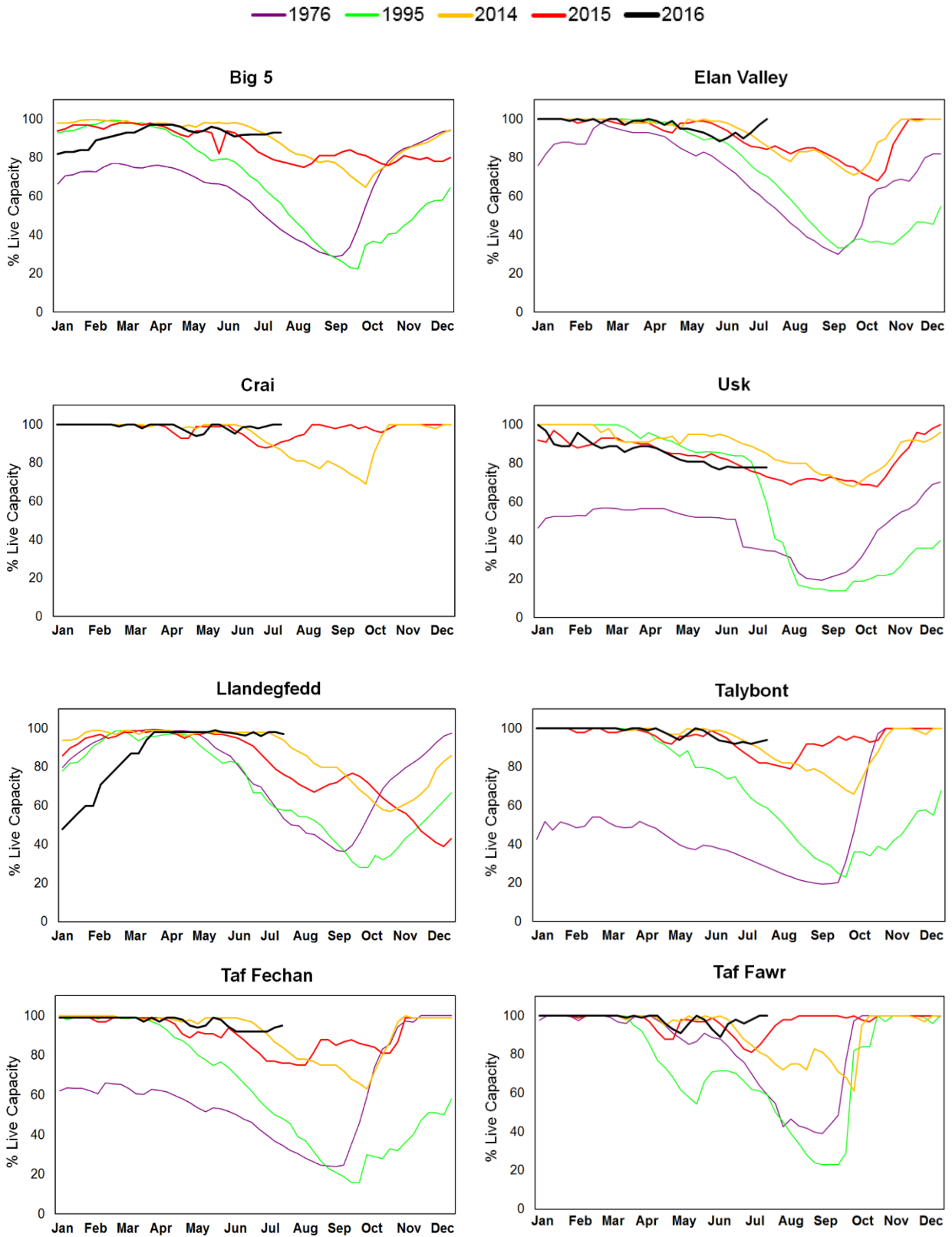
**Figure 18: Groundwater level charts: North Wales**



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

## Reservoir Storage

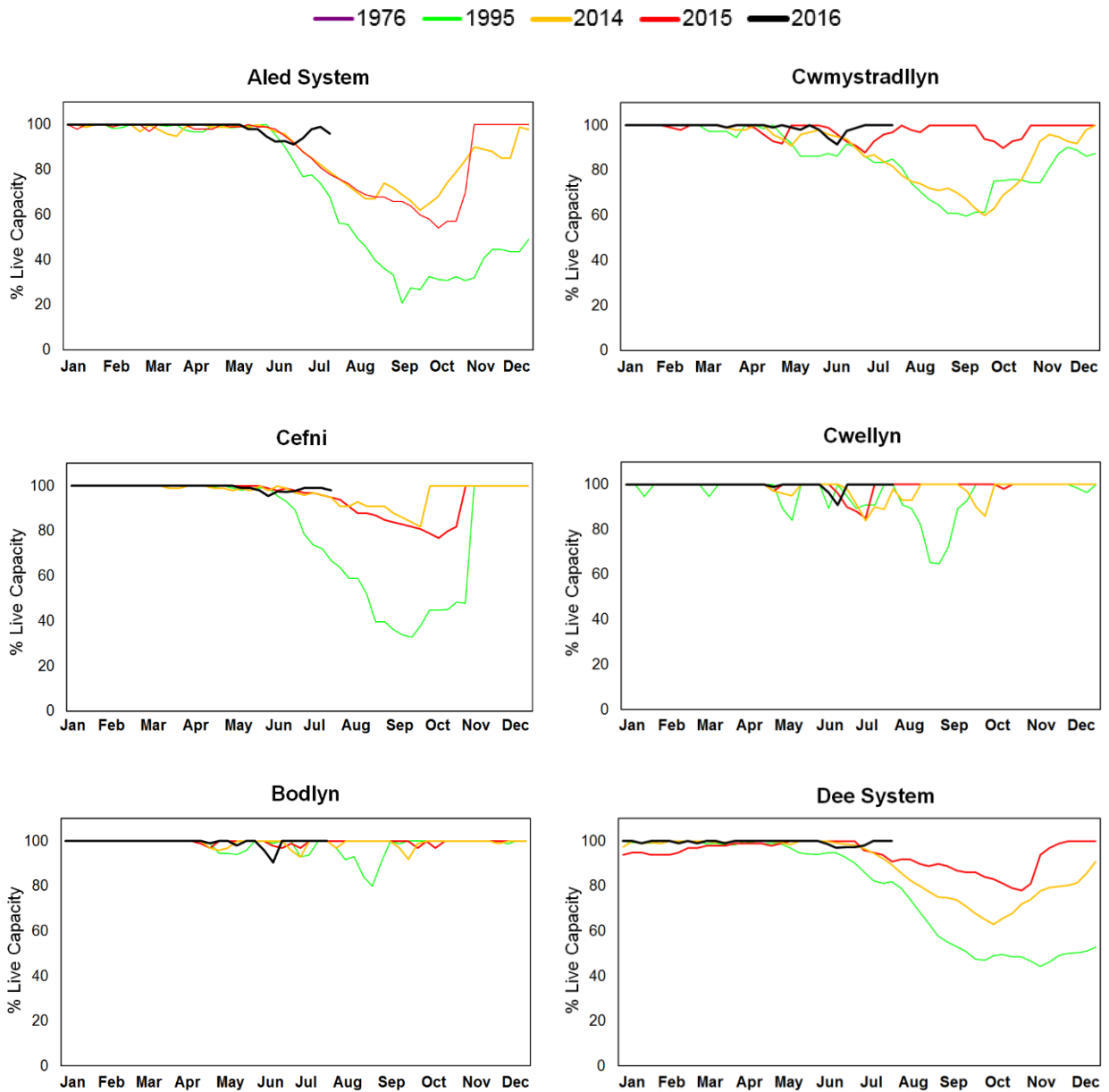
Figure 19: Reservoir charts: South East Wales



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

[Return to Summary](#)

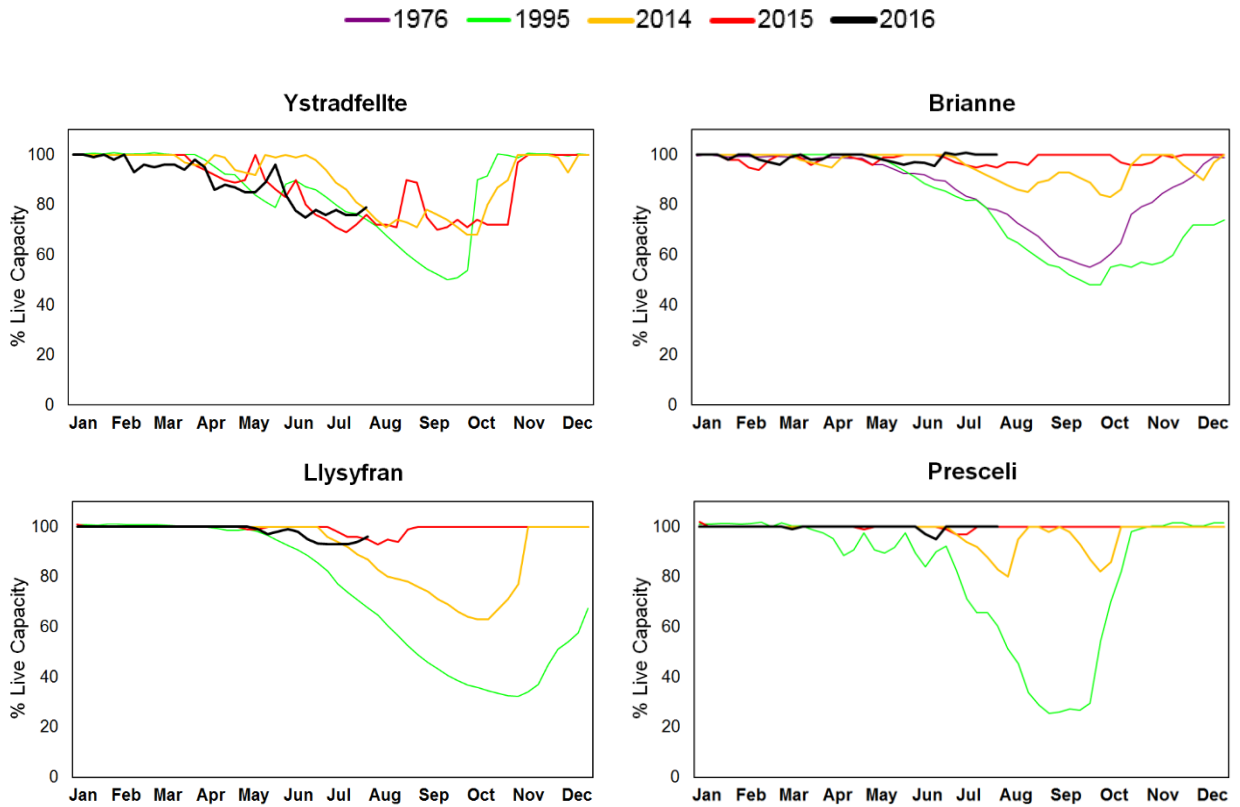
**Figure 20: Reservoirs charts: North Wales**



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

[Return to Summary](#)

**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).