

## Natural Resources Wales

- The monthly rainfall total received for Wales during September was 125% of the Long Term Average (LTA, 1961-90). South East, South West and North Wales received 124%, 138% and 112% of the LTA, respectively. Most of the catchments received rainfall more than the LTA apart from the north eastern catchments.
- At the end of September, soil moisture deficit (SMD) values across Wales were between 0 and 120.3mm for all MORECS squares. The difference when compared to the long term average September (1961-90), ranged from -63.5mm (wetter) to 75.3mm (drier).
- For river flows in Wales, 19 out of 30 indicator sites which had flow data were classed as *Normal* for September. 4 sites were classed as *Above normal* and 3 sites were classed as *Notably high*. 1 site was *Exceptionally high* and the remaining 3 sites were classed as *Below normal*.
- The overall reservoir storage across all indicator sites was greater than 81% full at the end of September and all reservoirs were within normal operating ranges.

### Rainfall\*

The monthly rainfall total received for Wales was 125% of the LTA for September. The percentage of rainfall recorded in catchments compared with the long term average (1961-90) across Wales was between 71% (Clwyd) and 157% (Dwyfor). The rainfall total for Wales was 29mm more than the September LTA. For South East, South West and North Wales the rainfall totals were 124%, 138% and 112% of the LTA, respectively. Most of the catchments received rainfall in September more than the LTA except the north eastern catchments with rainfall lower than the LTA.

Rainfall Map [National](#)

Rainfall Charts [National & Areas](#) [South East Wales](#) [North 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 0 and 120.3 mm. 17 out of 23 squares had SMD values which were less than the long-term average (wetter) and only 6 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 19 sites (out of 30 sites which had flow data ) were classed as *Normal*. 4 sites were classed as *Above normal* and 3 sites were *Notably high*. 1 site was *Exceptionally high* and the remaining 3 sites were classed as *Below normal*.

**North:** Flows in the area ranged from 26% (River Clwyd at Ruthin Weir) to 165% (River Dwyfor at Garndolbenmaen) of the September LTA Values.

**South East:** Flows in the area ranged from 49% (River Lugg at Butts Bridge) to 157% (River Taff at Ponypridd) of the September LTA values.

**South West:** The river flows within this area ranged from 88% (River Ystwyth at Pont Llolwyn) to 192% (River Loughor at Tir-y-Dail) of the September 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 September at all indicator sites (10 sites) were classed between *Below normal* (Eastwick) and *Above normal* (Hollybush and Dodleston Obs). 7 sites were classed as *Normal* (Pant-y-Lladron, Fernbank, Pont y Cambwll, Handley, Broxton Obs, Llanfair DC Obs and Greenfield Garage).

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

## Reservoir Storage

At the end of September most of the indicator reservoirs (14 out of 18) were greater than 81% full and 3 reservoirs were relative low (68-69% full) due to maintenance work carried out on these reservoirs.

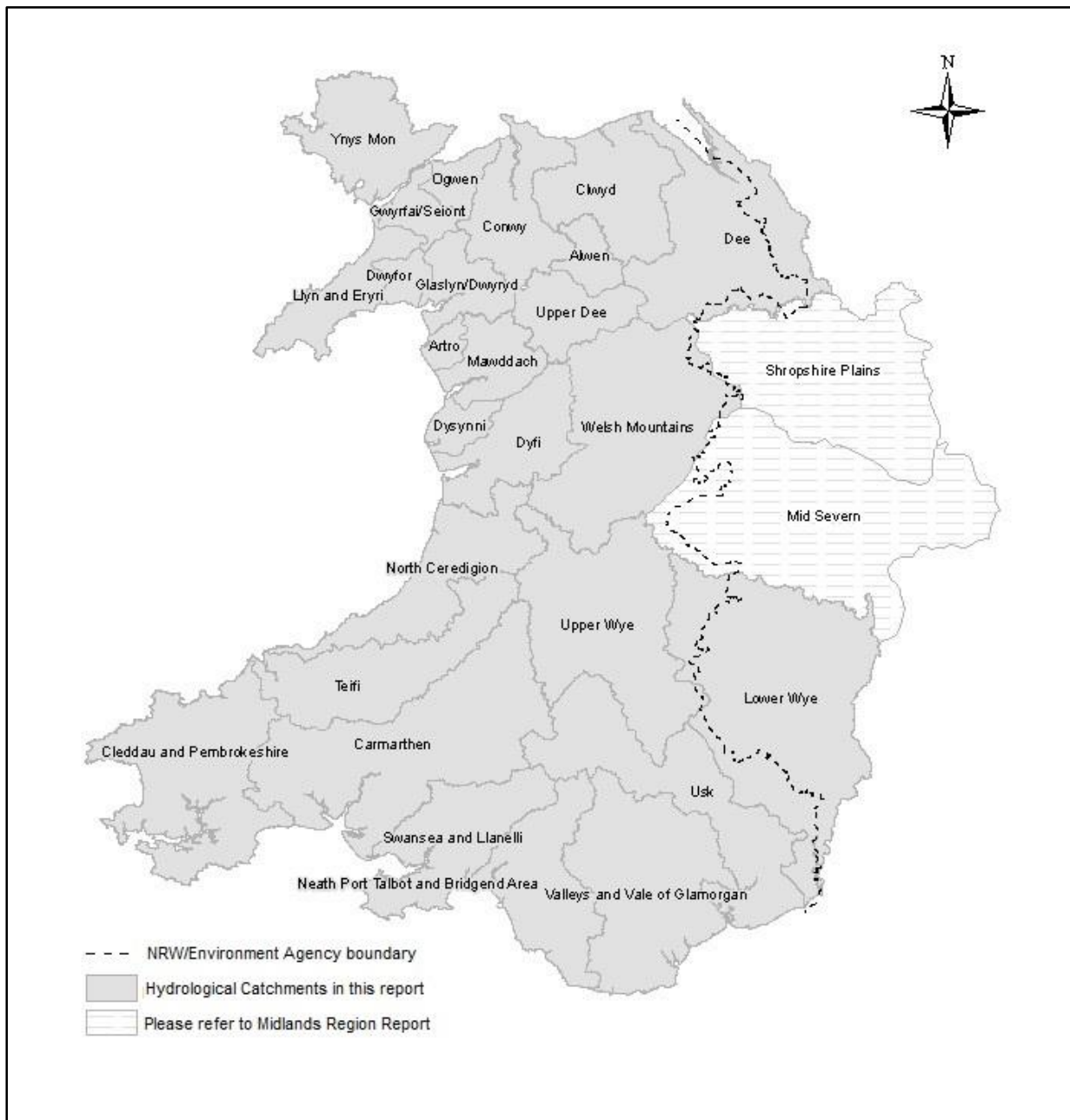
Reservoir Charts        [South East Wales](#) [North Wales](#) [South West Wales](#)

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.**

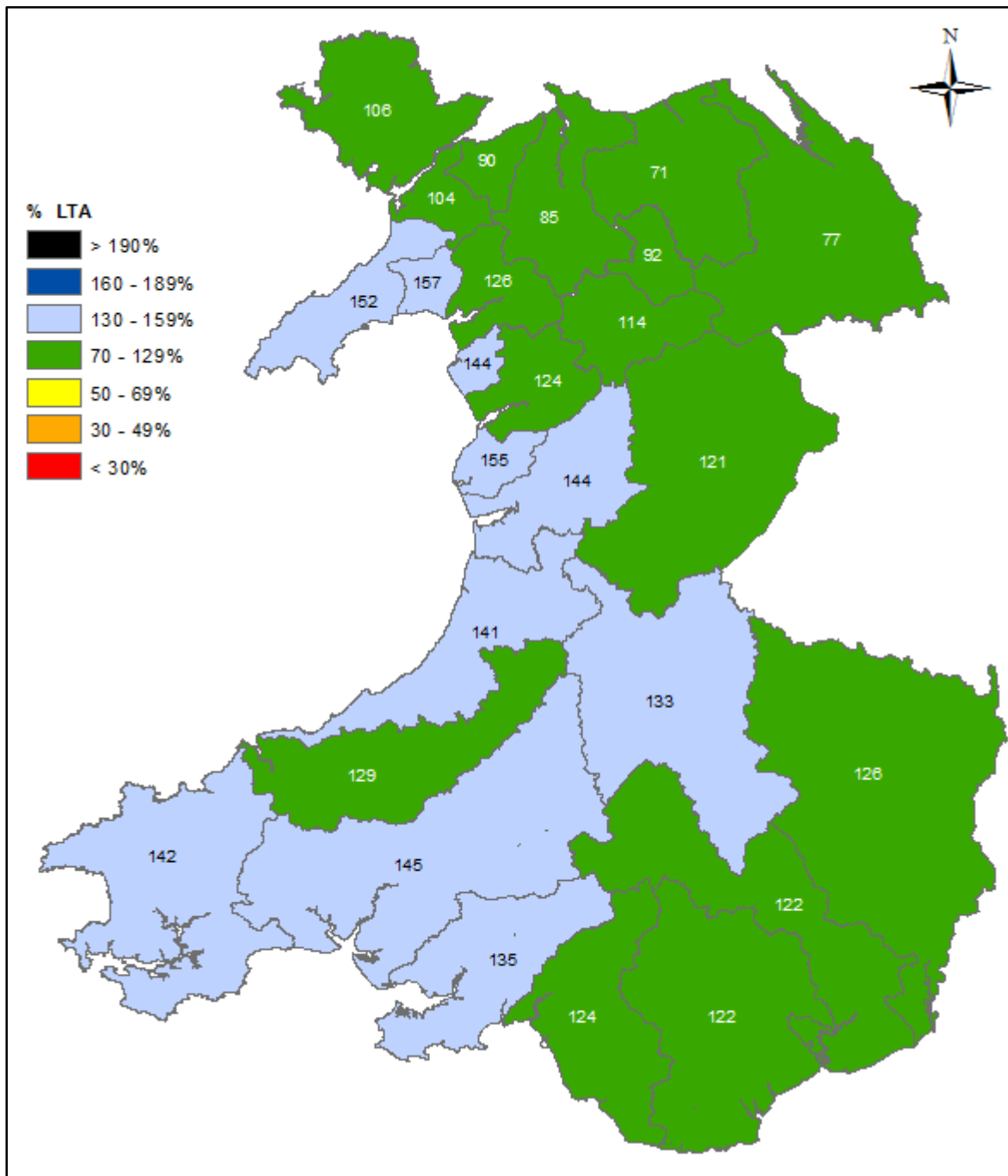
**For areas adjoining Natural Resources Wales, please see the reports for Environment Agency Midlands and North West England:**

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

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## Rainfall

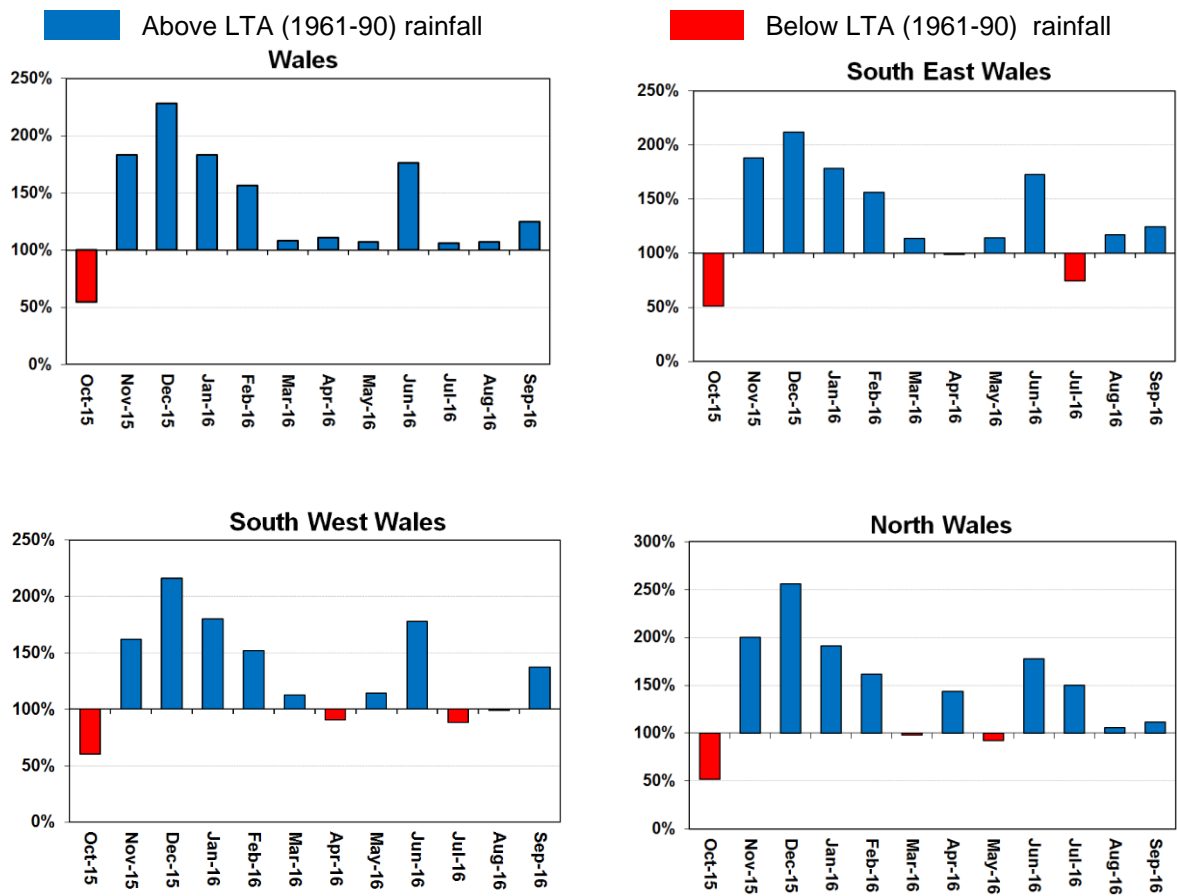


**Figure 2: Calculated catchment average September rainfall totals as a percentage of the 1961-90 September long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).**

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## Rainfall Charts

Figure 3: Rainfall Charts: National and Areas

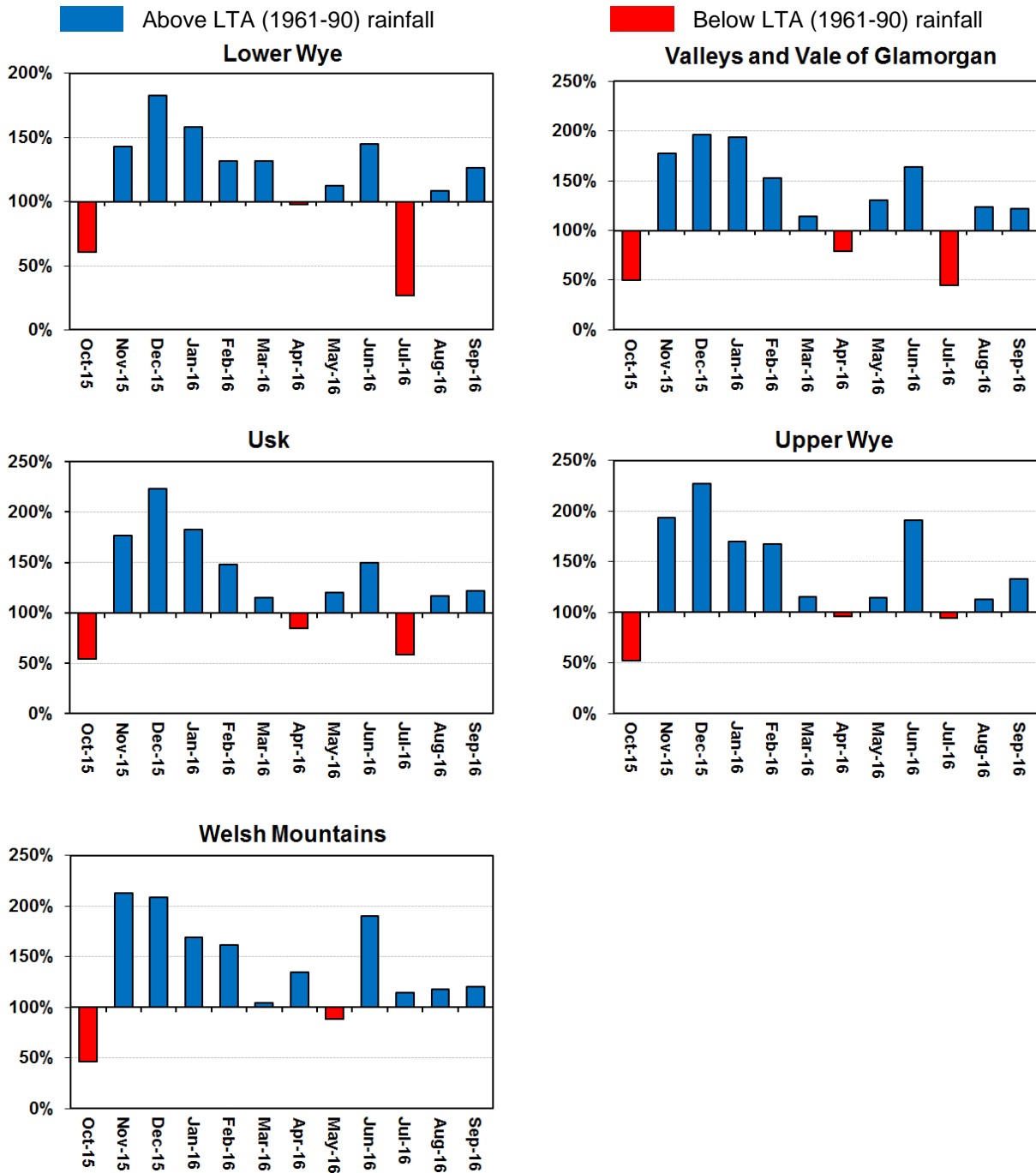


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

All data are provisional and Jul be subject to revision.

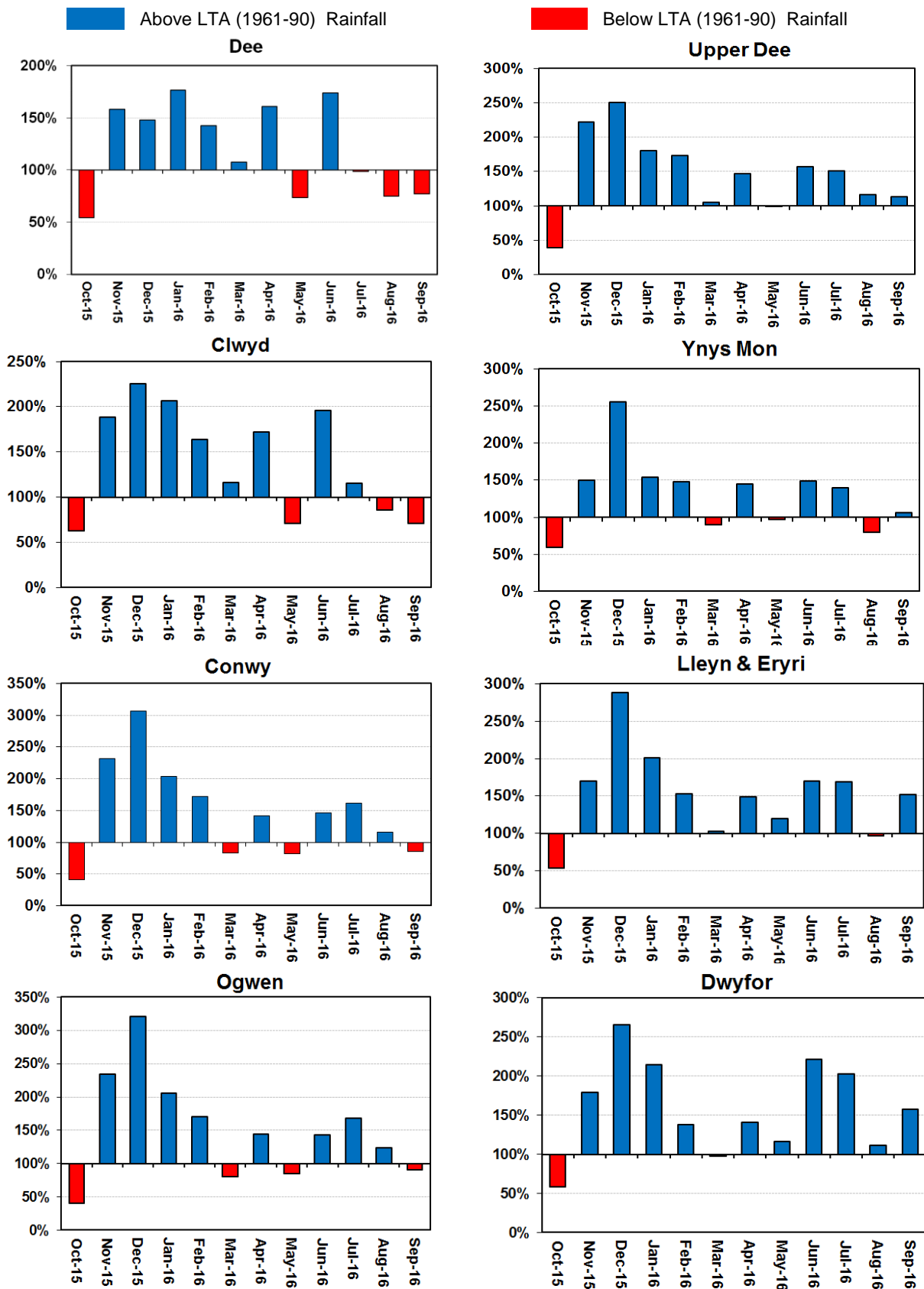
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**Figure 4: Rainfall Charts: South East Wales**



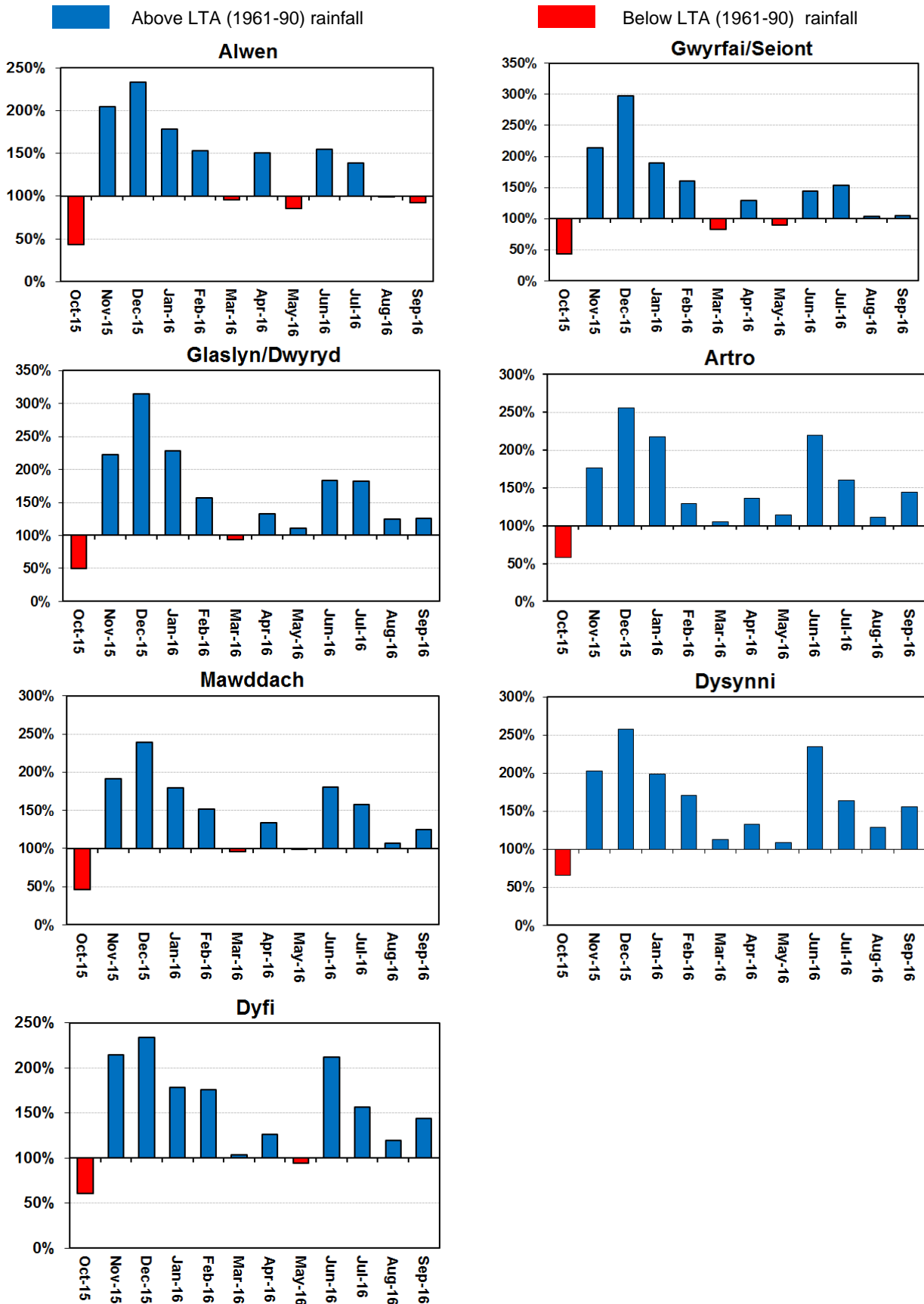
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for South East Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

**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).

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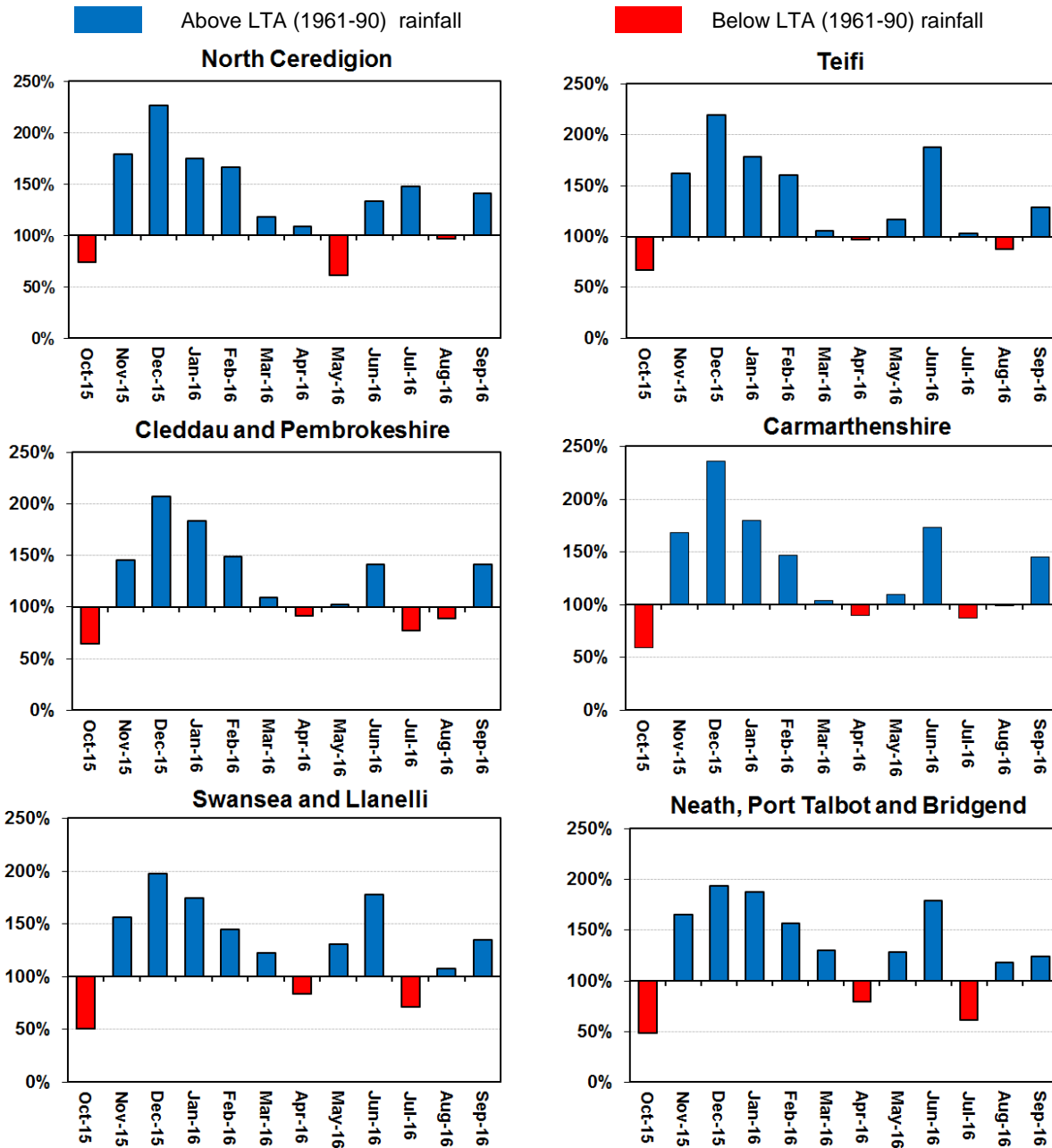


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).



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**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)

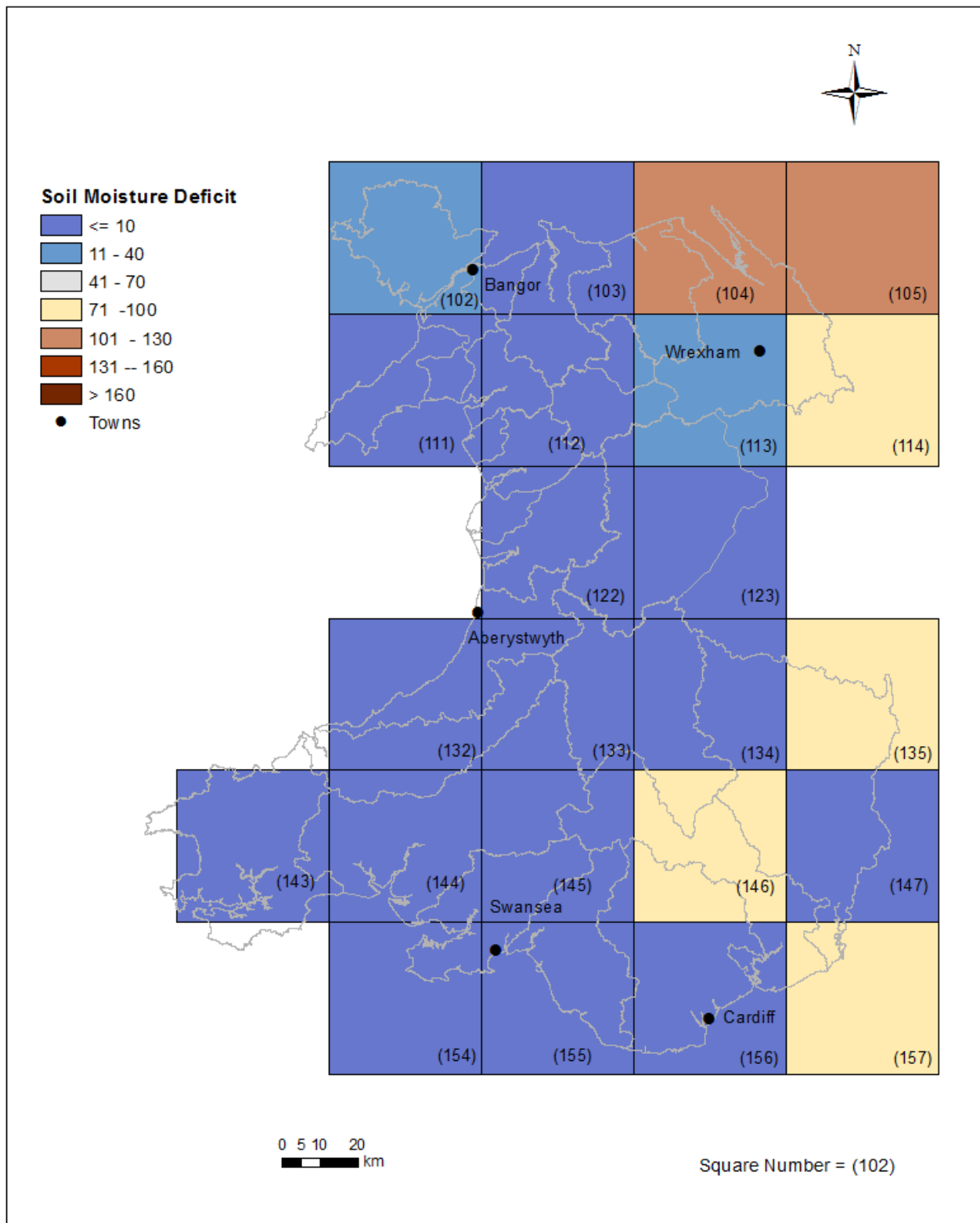


Figure 7: MORECS soil moisture deficits (mm) for September for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

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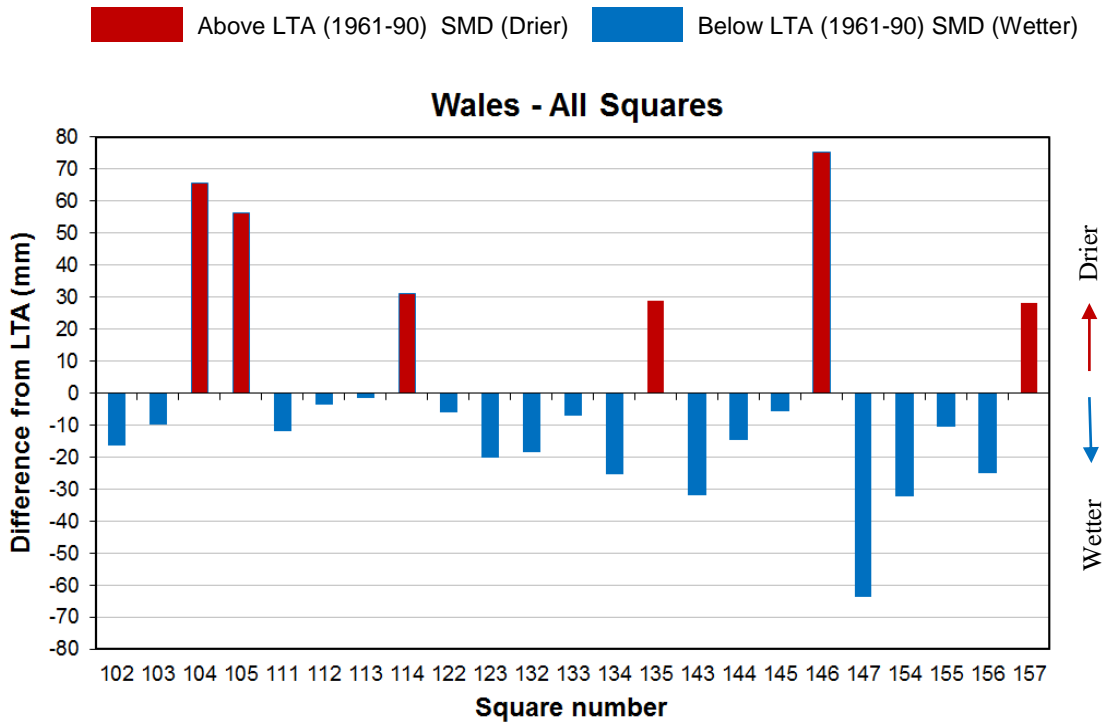


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for July for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

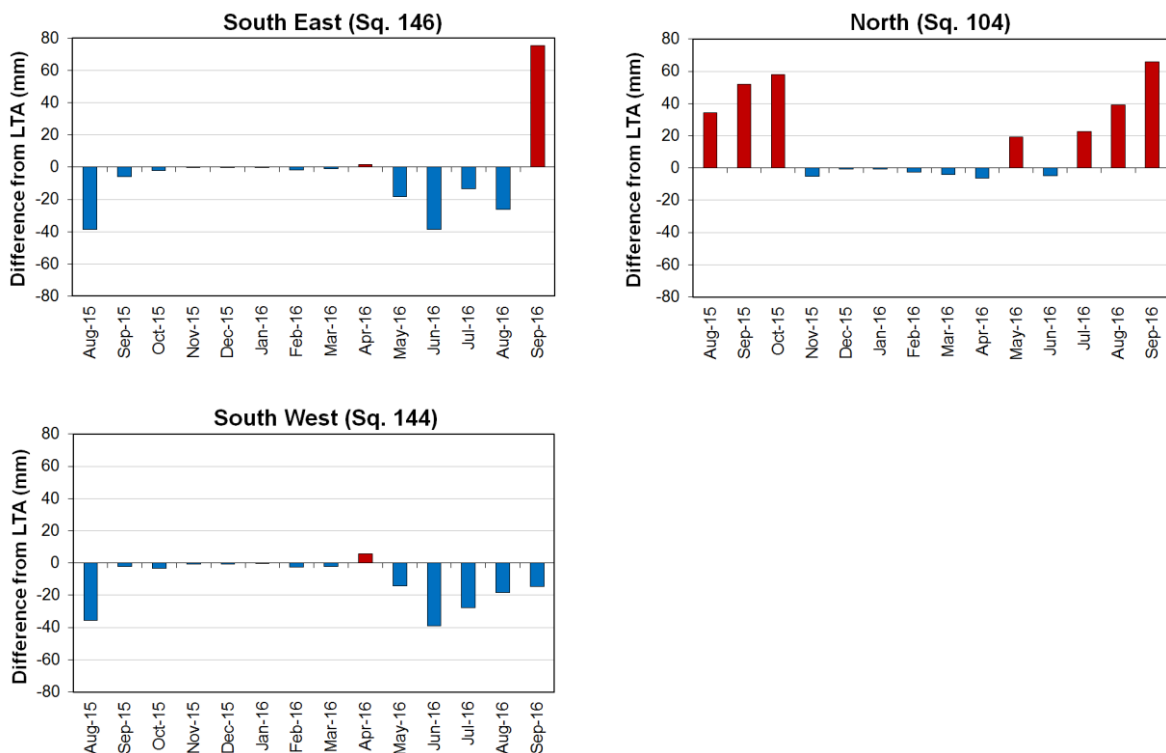


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales)

## River Flow

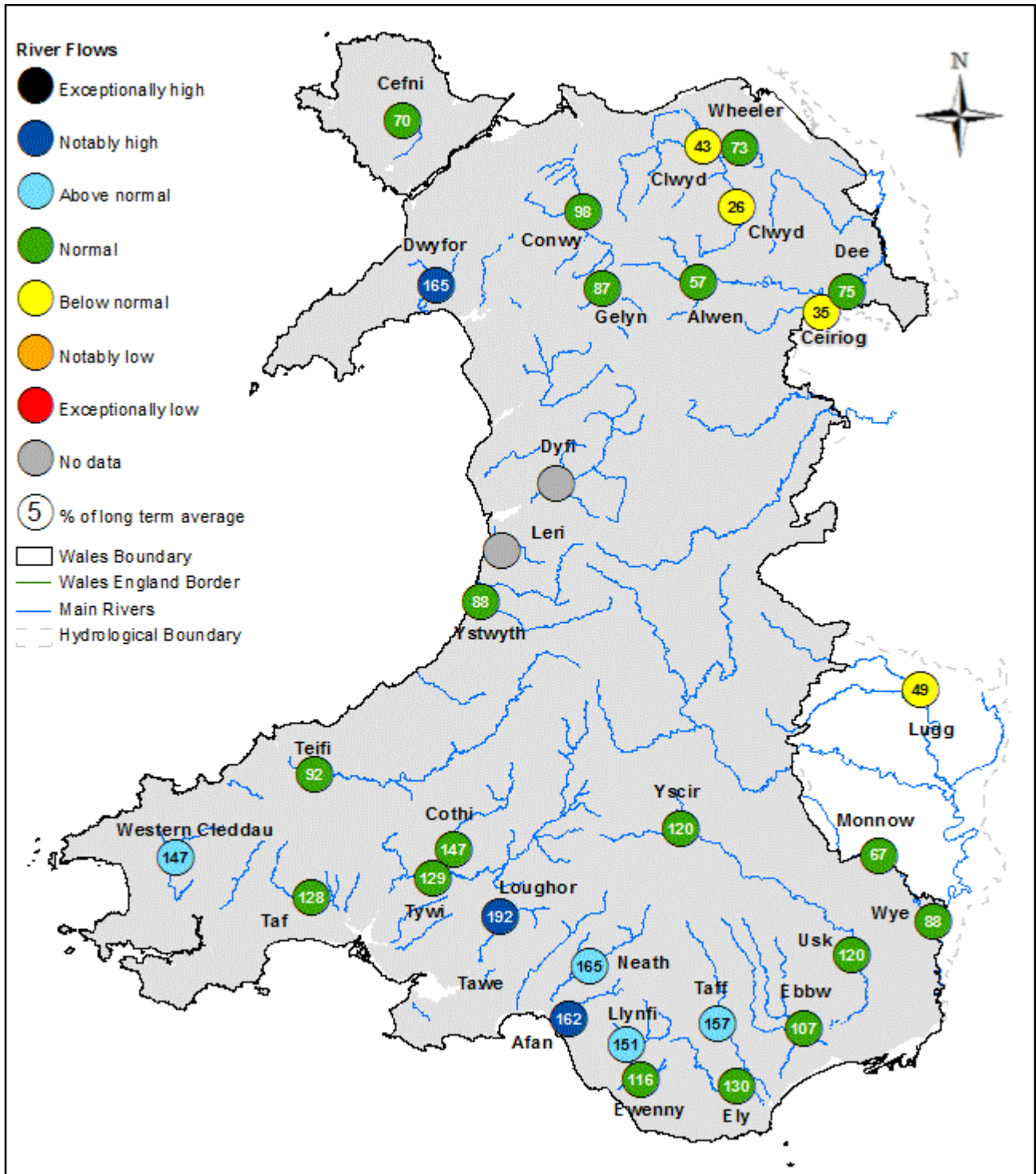


Figure 10: Monthly mean river flow for September, classed relative to analysis of historic September monthly means (Source: Natural Resources Wales).

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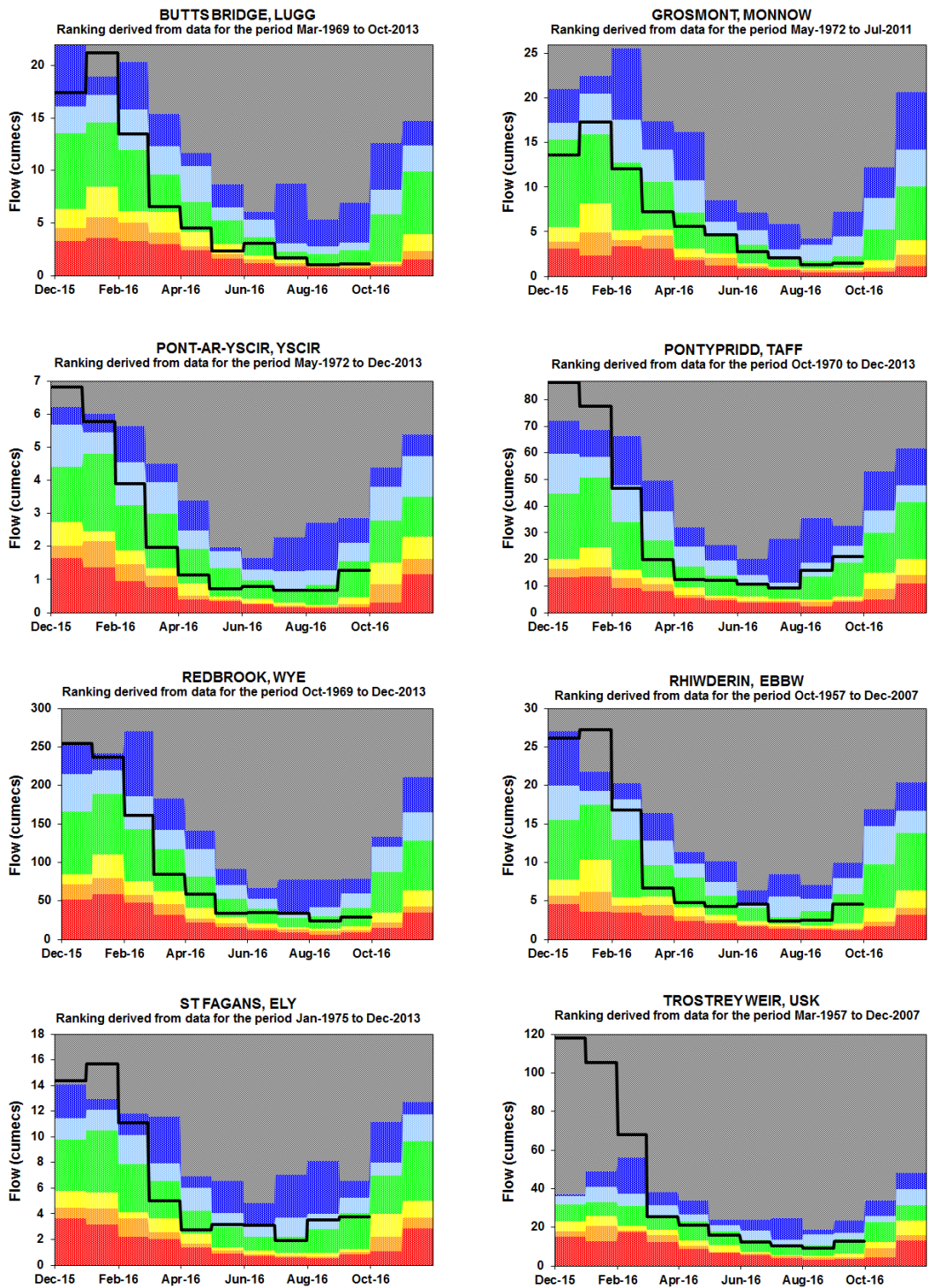
SITE NAME	RIVER	September 2016			September 2015		September LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Monthly Min (m3/s)	Monthly Max (m3/s)
<b>River Flow Sites : South East Area</b>									
Butts Bridge	Lugg	Normal	49%	1.06	50%	1.09	2.18	0.65	9.64
Grosmont	Monnow	Normal	67%	1.51	77%	1.73	2.25	0.43	13.60
Pont ar Yscir	Yscir	Normal	120%	1.28	64%	0.69	1.07	0.13	3.95
Pontypridd	Taff	Above normal	157%	21.00	95%	13	13.36	3.67	41.60
Redbrook	Wye	Normal	88%	28.80	71%	23	32.65	7.85	121.00
Rhiwderin	Ebbw	Normal	107%	4.59	78%	3.35	4.30	0.80	14.60
St Fagans	Ely	Normal	130%	3.73	113%	3.24	2.88	0.67	11.90
Trostrey Weir	Usk	Normal	120%	12.90	116%	12.49	10.74	3.27	24.70
<b>River Flow Sites : North Area</b>									
Bodfari	Wheeler	Normal	73%	0.29	70%	0.28	0.40	0.20	1.01
Bodffordd	Cefni	Normal	70%	0.14	10%	0.02	0.20	0.01	0.78
Brynkinalt Weir	Ceiriog	Below normal	35%	0.59	42%	0.71	1.70	0.35	6.67
Cwmlanerch	Conwy	Normal	98%	15.80	38%	6.03	16.06	1.37	36.5
Cynefail	Gelyn	Normal	87%	0.53	36%	0.22	0.61	0.08	1.41
Dol y Bont	Leri	N/A	N/A	N/A	N/A	N/A	1.38	0.22	2.72
Druid	Alwen	Normal	57%	1.77	46%	1.41	3.08	0.72	8.81
Dyfi bridge	Dyfi	N/A	N/A	N/A	N/A	N/A	17.36	4.16	36.30
Garndolbenmaen	Dwyfor	Notably high	165%	3.76	48%	1.10	2.28	0.52	4.49
Manley Hall	Dee	Normal	75%	15.10	52%	10.60	20.26	9.23	50.20
Pont y Cambwll	Clwyd	Below normal	43%	118	41%	1.13	2.73	0.52	9.73
Ruthin Weir	Clwyd	Normal	26%	0.12	24%	0.11	0.46	0.04	1.83
<b>River Flow Sites : South West Area</b>									
Capel Dewi	Tywi	Normal	129%	31.90	107%	26.37	24.68	4.96	76.50
Clog y Fran	Taf	Normal	128%	4.90	170%	6.50	3.83	0.51	15.30
Coytrahen	Llynfi	Above normal	151%	2.79	142%	2.62	1.85	0.39	5.06
Felin Mynachdy	Cothi	Normal	147%	10.90	121%	9.01	7.42	0.93	23.90
Glanteifi	Teifi	Normal	92%	15.40	123%	20.63	16.82	1.07	48.70
Keepers Lodge	Ewenny	Normal	116%	1.43	122%	1.50	1.23	0.39	4.60
Marcroft	Afan	Notably high	162%	6.70	132%	5.08	4.14	0.91	8.58
Pont Llolwyn	Ystwyth	Normal	88%	3.91	52%	2.29	4.43	0.71	10.70
Treffgarne *	Western Cleddau	Above normal	147%	2.12	N/A	N/A	1.44	0.33	3.77
Resolven	Neath	Above normal	165%	11.40	100%	6.91	6.92	0.98	15.20
Tir-y-Dail	Loughor	Notably high	192%	2.55	118%	1.57	1.33	0.43	2.92
Ynystanglws	Tawe	Exceptionally high	188%	18.20	99%	9.56	9.69	0.57	26.30

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

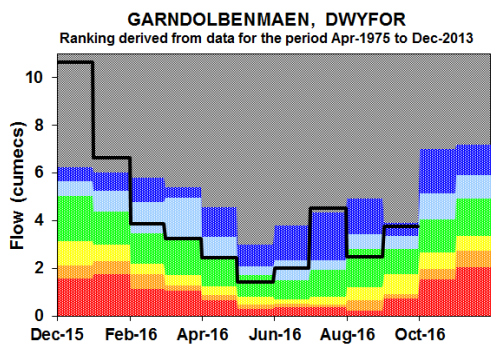
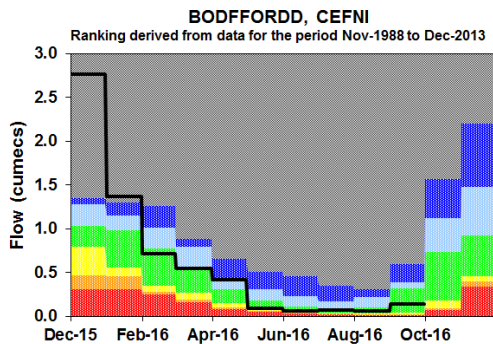
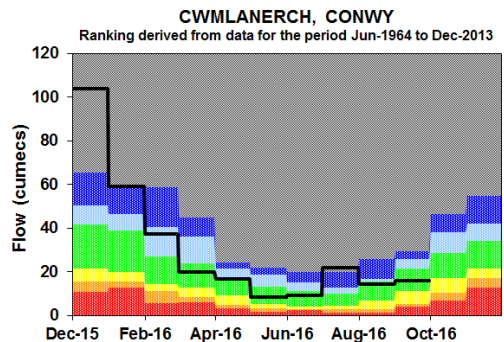
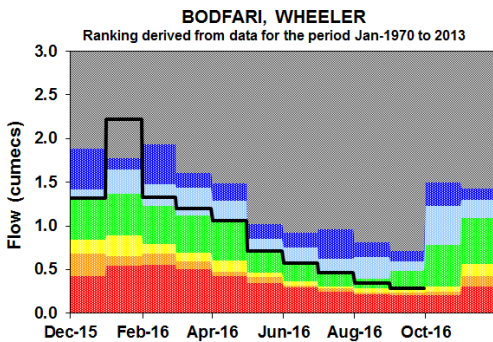
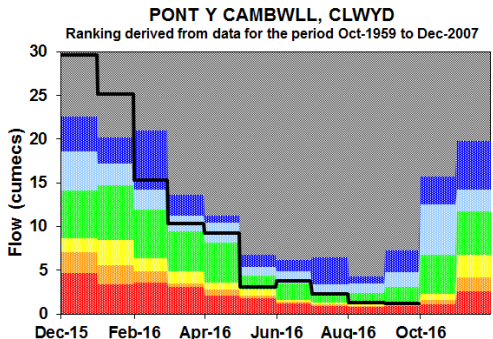
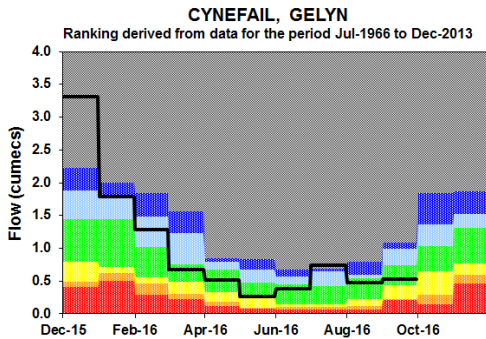
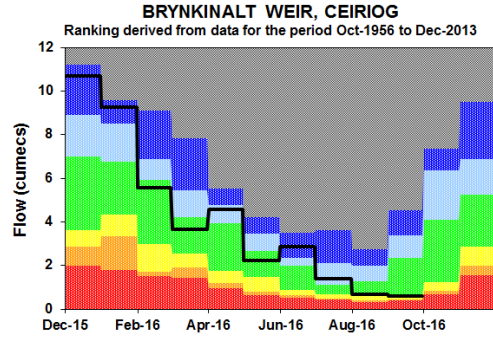
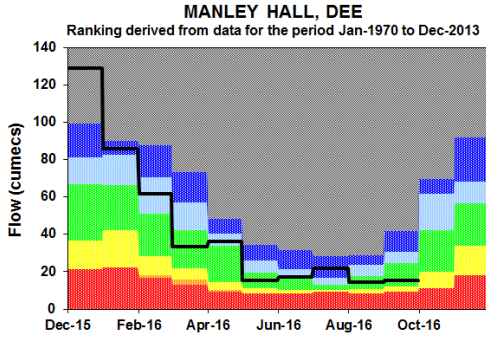
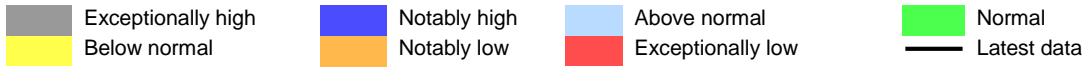
Figure 12: River Flow Charts: South East Wales



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

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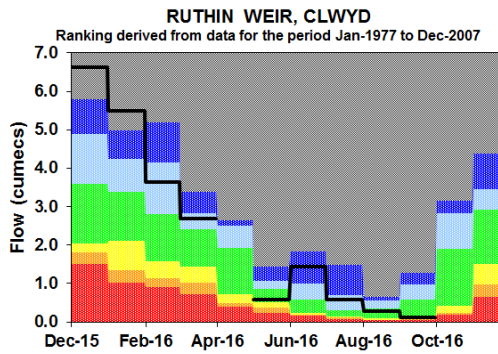
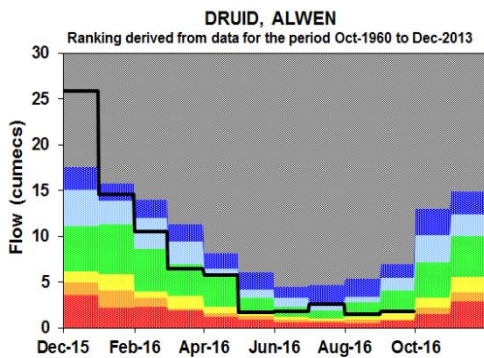
**Figure 13: River Flow Charts: North Wales**



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

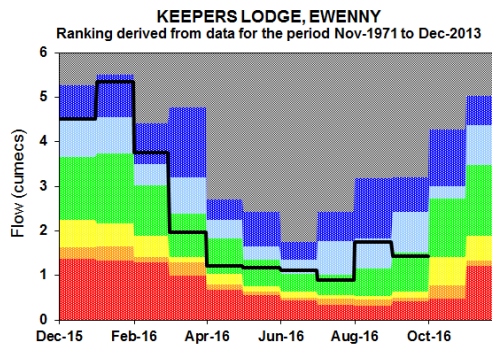
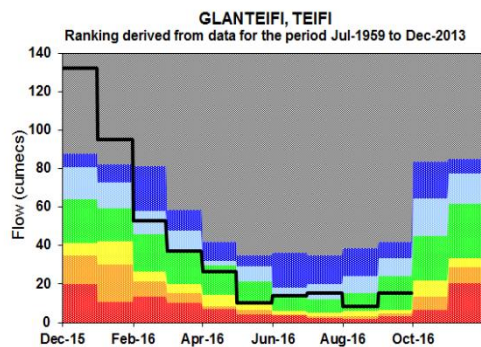
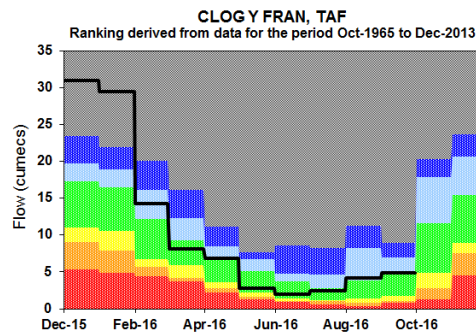
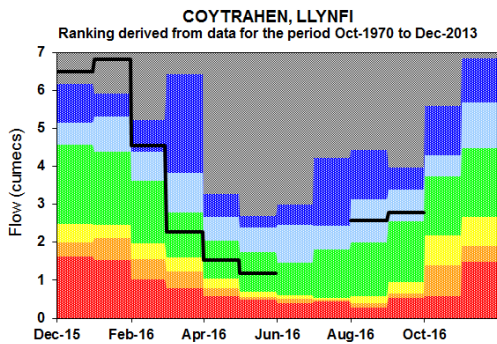
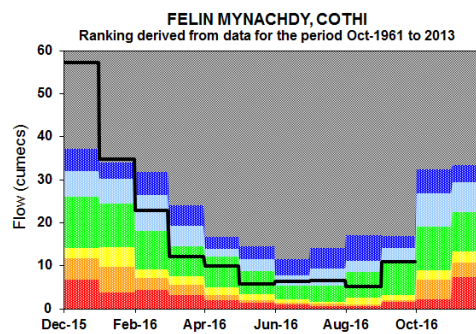
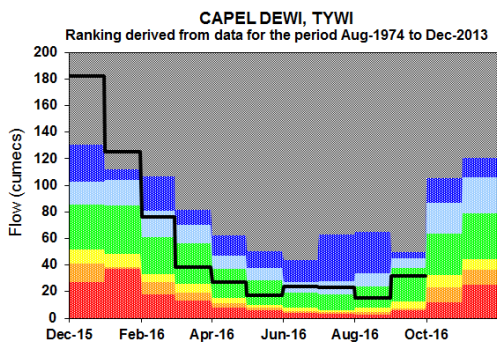


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(Please note there was no data available at Ruthin Weir for April 2016)

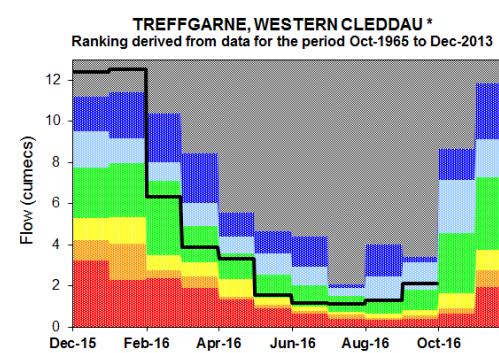
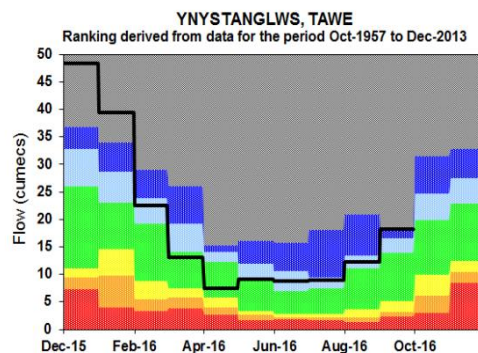
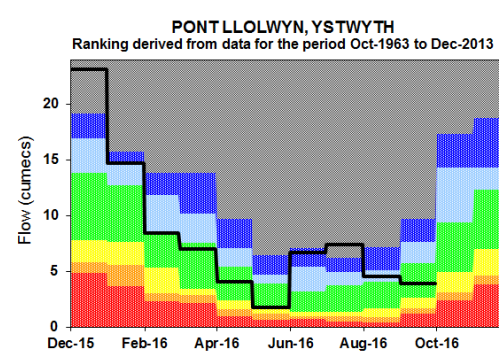
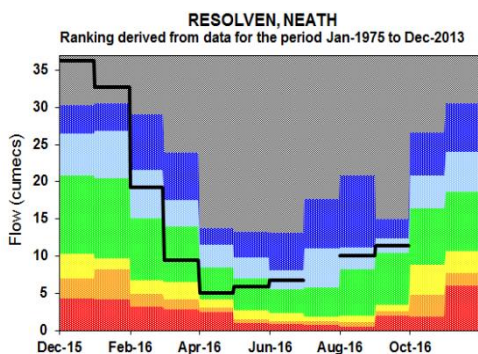
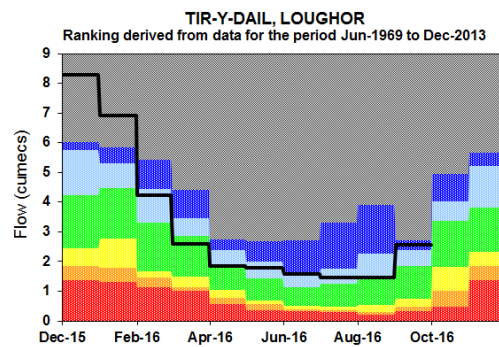
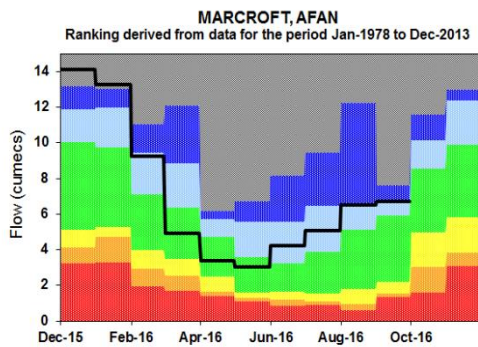
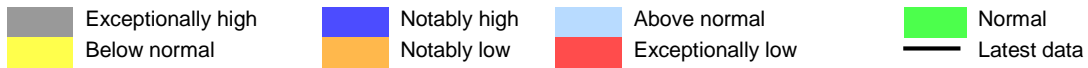
**Figure 14: River Flow Charts: South West Wales**



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



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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 data for Resolven for July 2016 due to river works )

## Groundwater Levels

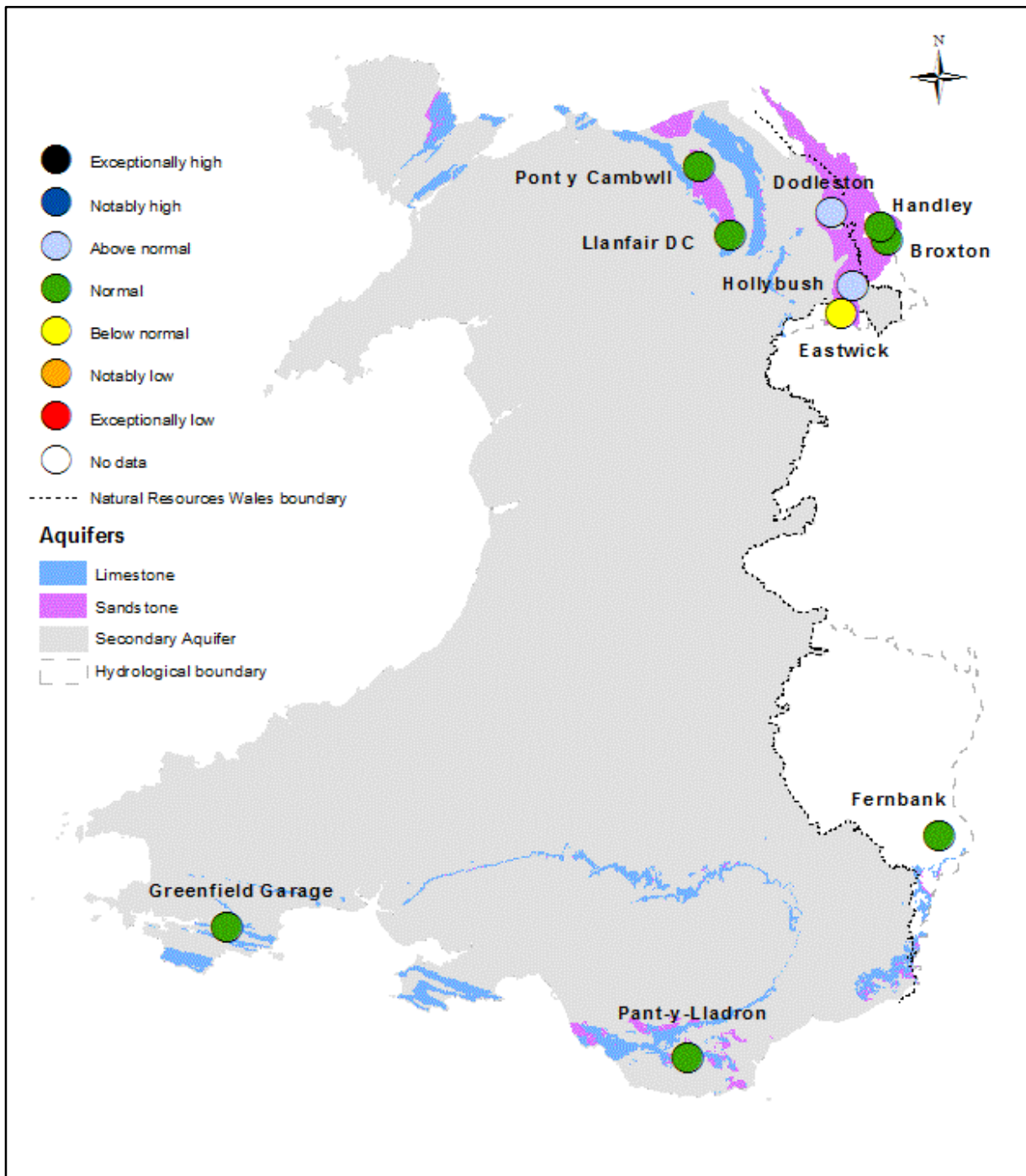
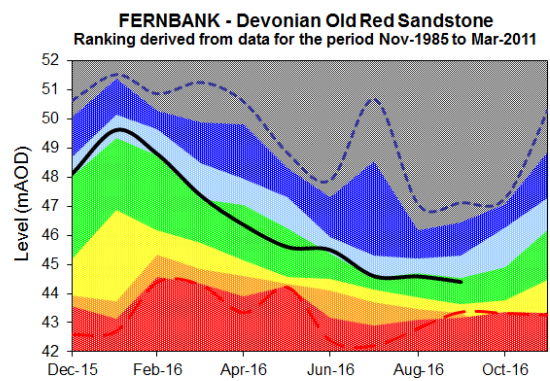
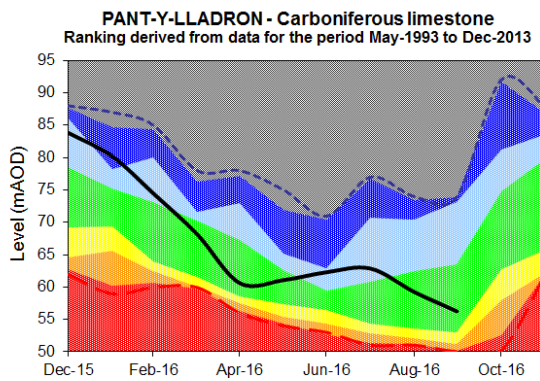
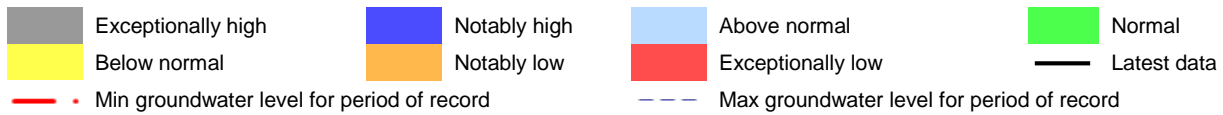


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic September groundwater levels (Source: Natural Resources Wales and Environment Agency).

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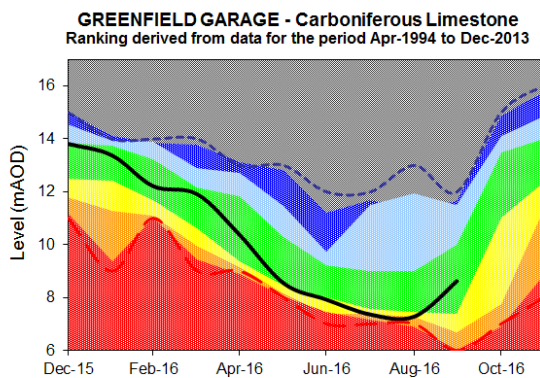
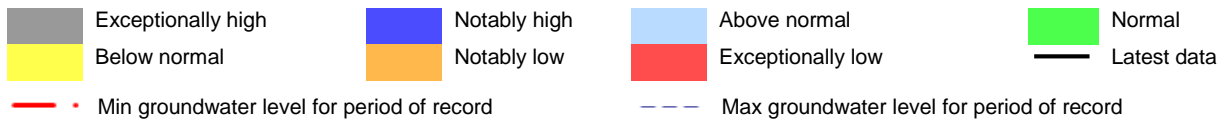
## Groundwater charts

**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).

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

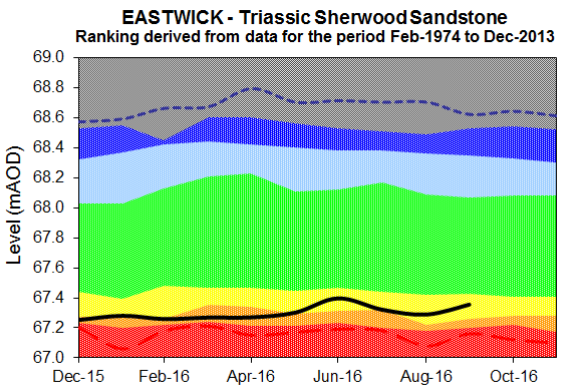
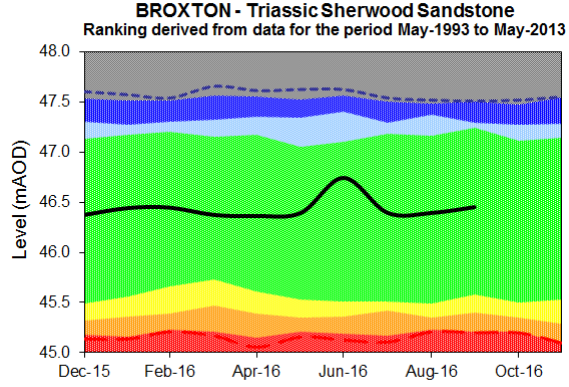
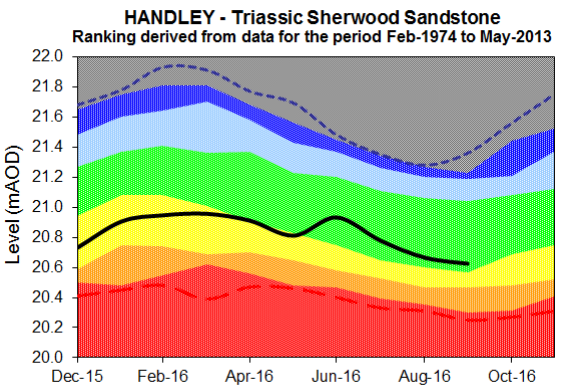
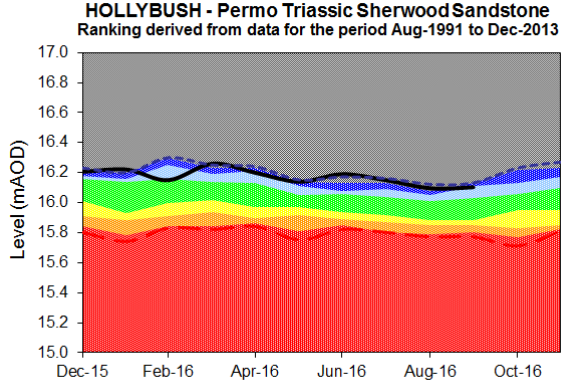
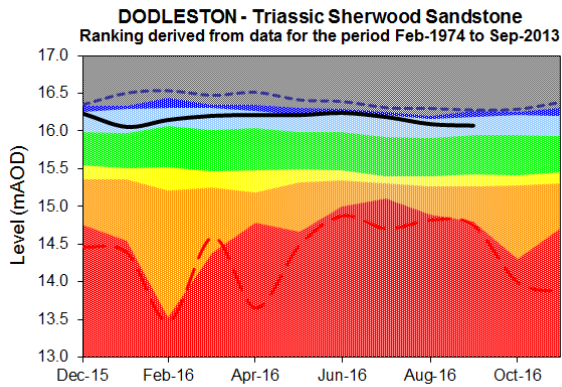
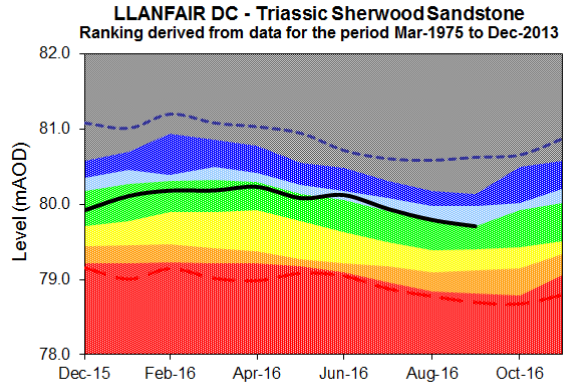
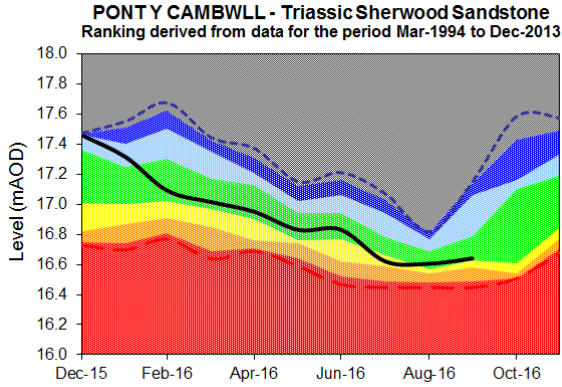
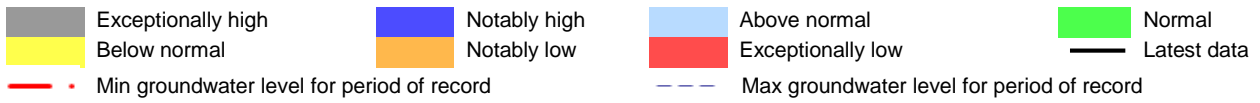


End of month groundwater levels for the past 10 months for index sites (Source: Natural Resources Wales).



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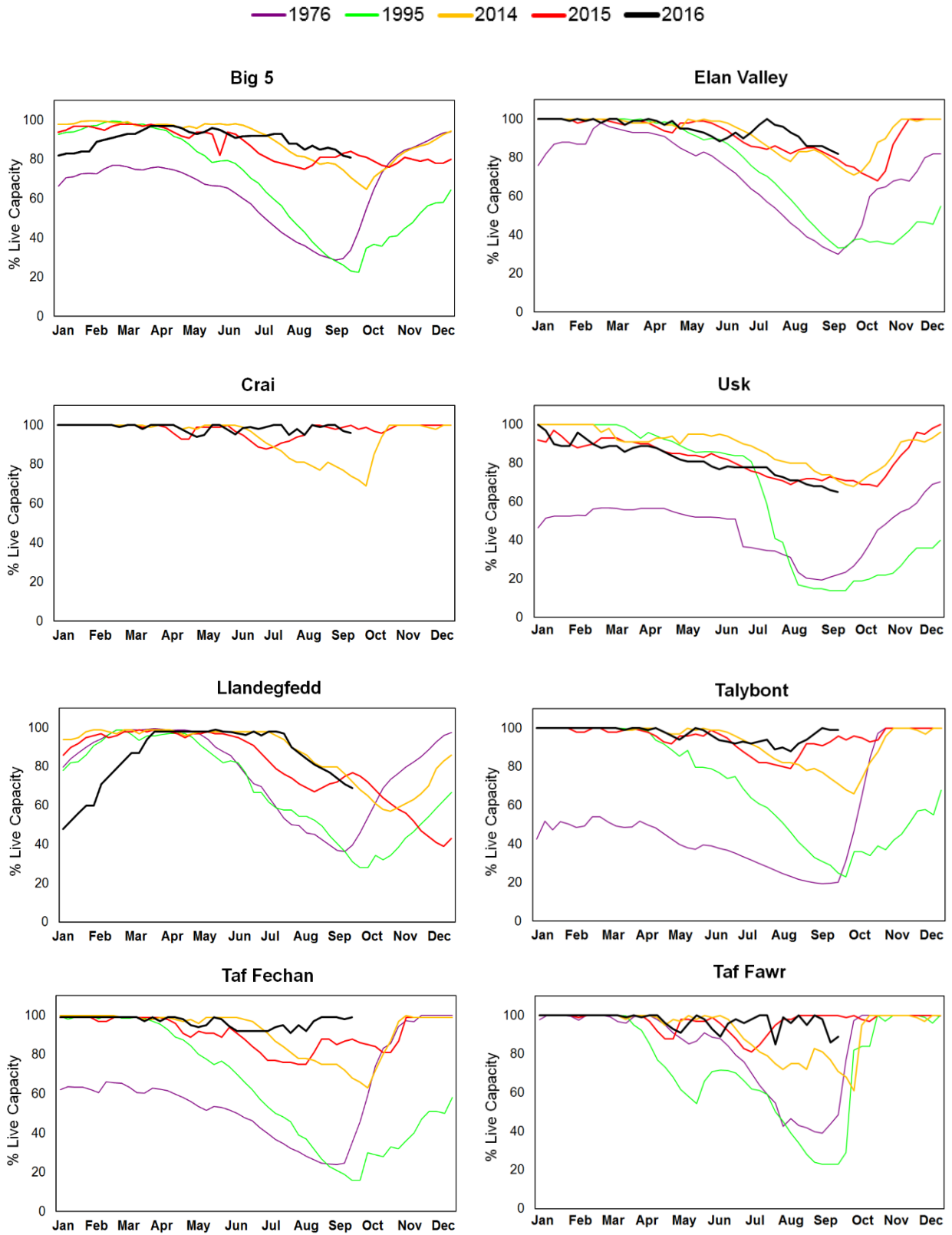
**Figure 18: Groundwater level charts: North Wales**



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

## Reservoir Storage

Figure 19: Reservoir charts: South East Wales

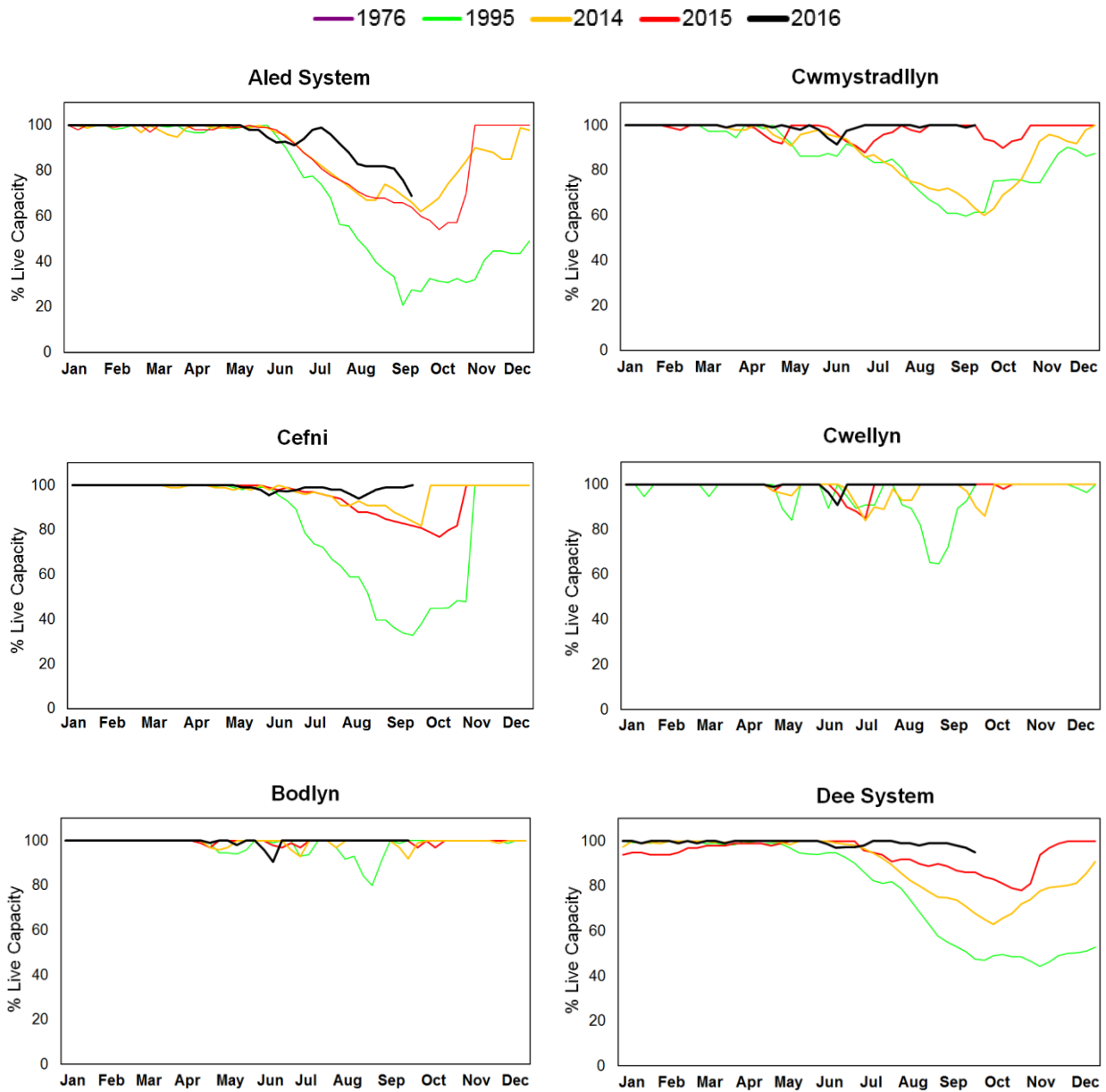


**Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water)**

(Please note that the reservoir Llandegfedd stock was low (69%) at the end of September due to maintenance work carried out on this reservoir)

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

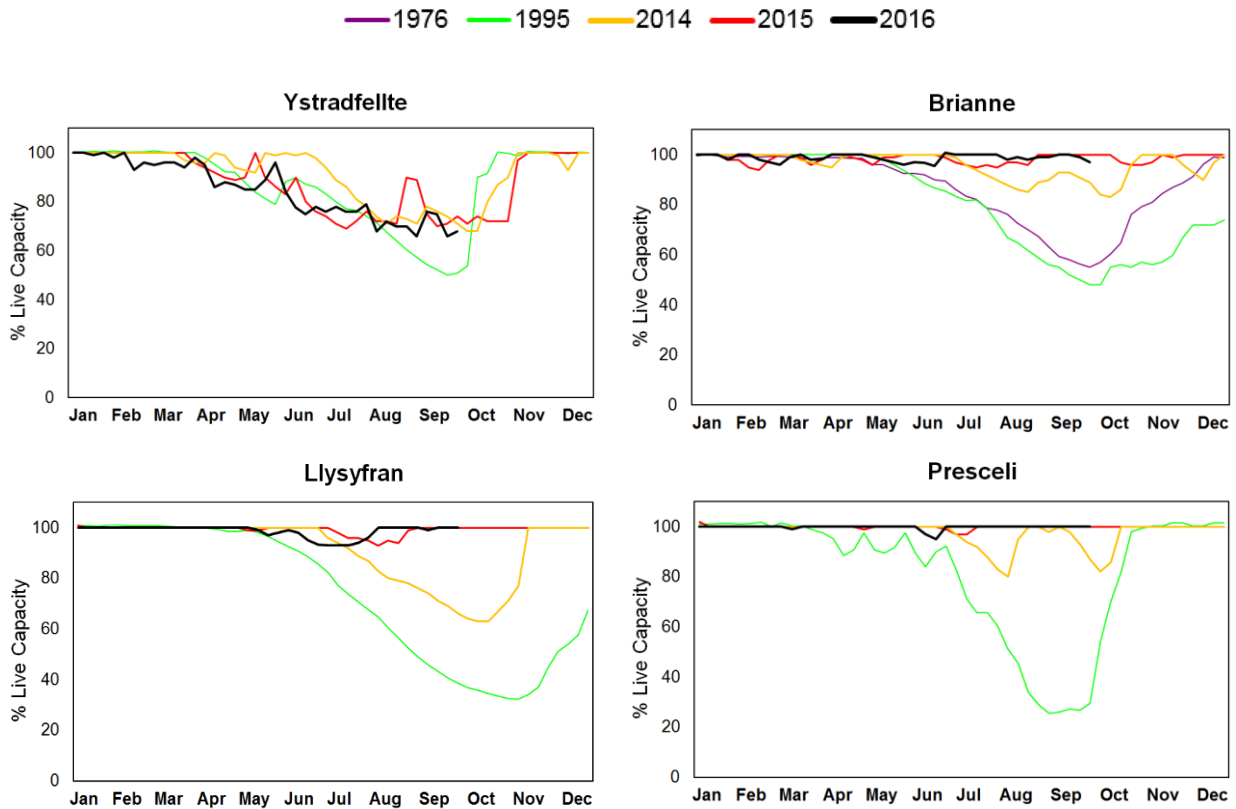


**Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water).**

(Please note that the reservoir Aled system stock was low (69%) at the end of September due to maintenance work carried out on this reservoir)

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



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

(Please note that the reservoir Ystradfelite stock was low (68%) at the end of September due to maintainance work carried out on this reservoir)

## 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).