

Natural Resources Wales

- The monthly rainfall total received for Wales during January was 65% of the Long Term Average (LTA, 1961-90). South East, South West and North Wales received 63%, 71% and 60% of the LTA, respectively. The total rainfall for Wales was the second lowest rainfall for January since 2000. For accumulated rainfall the four months from October 2016 to January 2017 were also the driest for Wales since 1963 and the second driest four months for Wales on record since 1910 (108 years).
- At the end of January, soil moisture deficit (SMD) values across Wales were 0mm for all MORECS squares. Soil was slightly wetter than the long term average for all the squares for January.
- For river flows in Wales, all the indicator sites were lower than normal. 6 out of 30 indicator sites which had flow data available were classed as *Exceptionally low* and 15 were classed as *Notably low* for January. The remaining 9 sites were classed as *Below normal*.
- The overall reservoir storage across all indicator sites was greater than 91% at the end of January and all reservoirs were within normal operating ranges.

Rainfall*

The monthly rainfall total received for Wales was 65% of the LTA for January. The percentage of rainfall recorded in catchments compared with the LTA across Wales was between 42% (Upper Dee) and 88% (North Ceredigion). The rainfall total for Wales was 51mm less than the January LTA. For South East, South West and North Wales the rainfall totals were 63%, 71% and 60% of LTA, respectively.

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 were 0mm. Soil was slightly wetter than the long term average for all the squares.

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 were lower than normal for all the indicator sites across Wales. 6 sites (out of 30 sites which had flow data) were classed as *Exceptionally low* and 15 were classed as *Notably low*. The remaining 9 sites were classed as *Below normal*.

South East: Flows in the area ranged from 24% (River Lugg at Butts Bridge) to 56% (River Usk at Trostrey Weir) of the January LTA values.

South West: The river flows within this area ranged from 39% (River Neath at Resolven) to 61% (River Ystwyth at Pont Llolwyn) of the January LTA values.

North: Flows in the area ranged from 37% (River Gelyn at Cynefail) to 73% (River Wheeler at Bodfari) of the January 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 January at all indicator sites (10 sites) were classed between *Below normal* to *Above normal* (Dodleston). 2 sites were classed as *Normal* (Hollybush and Broxton). The 7 sites which were classed as *Below normal* were Pant-y-Lladron, Fernbank, Greenfield Garage, Pont y Cambwll, Llanfair, Handley and Eastwick).

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

Reservoir Storage

At the end of January most of the indicator reservoirs (14 out of 18) were greater than 91% full and were in normal range for the time of year. However, 3 reservoirs were between 58% (Usk) -86% (Big 5 and Llandegfedd) full due to maintenance work being 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.

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Natural Resources Wales

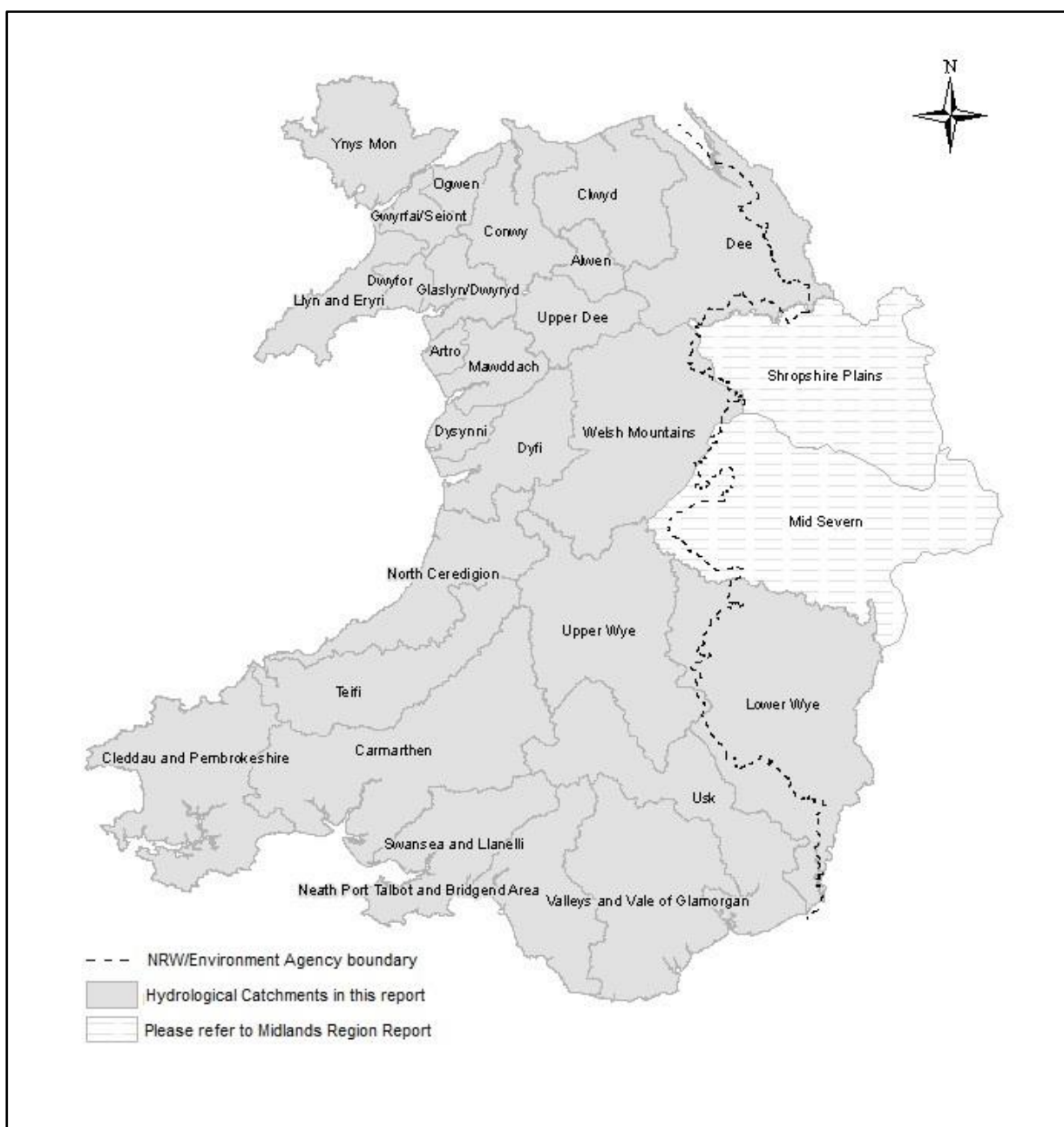


Figure 1: The Natural Resources Wales Water Situation Report features sites in the catchments shown. Parts of the Shropshire Plains and Mid Severn catchments are within Wales. For full information on these catchments, please see the Environment Agency Midlands Water Situation Report.

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](#)

Rainfall

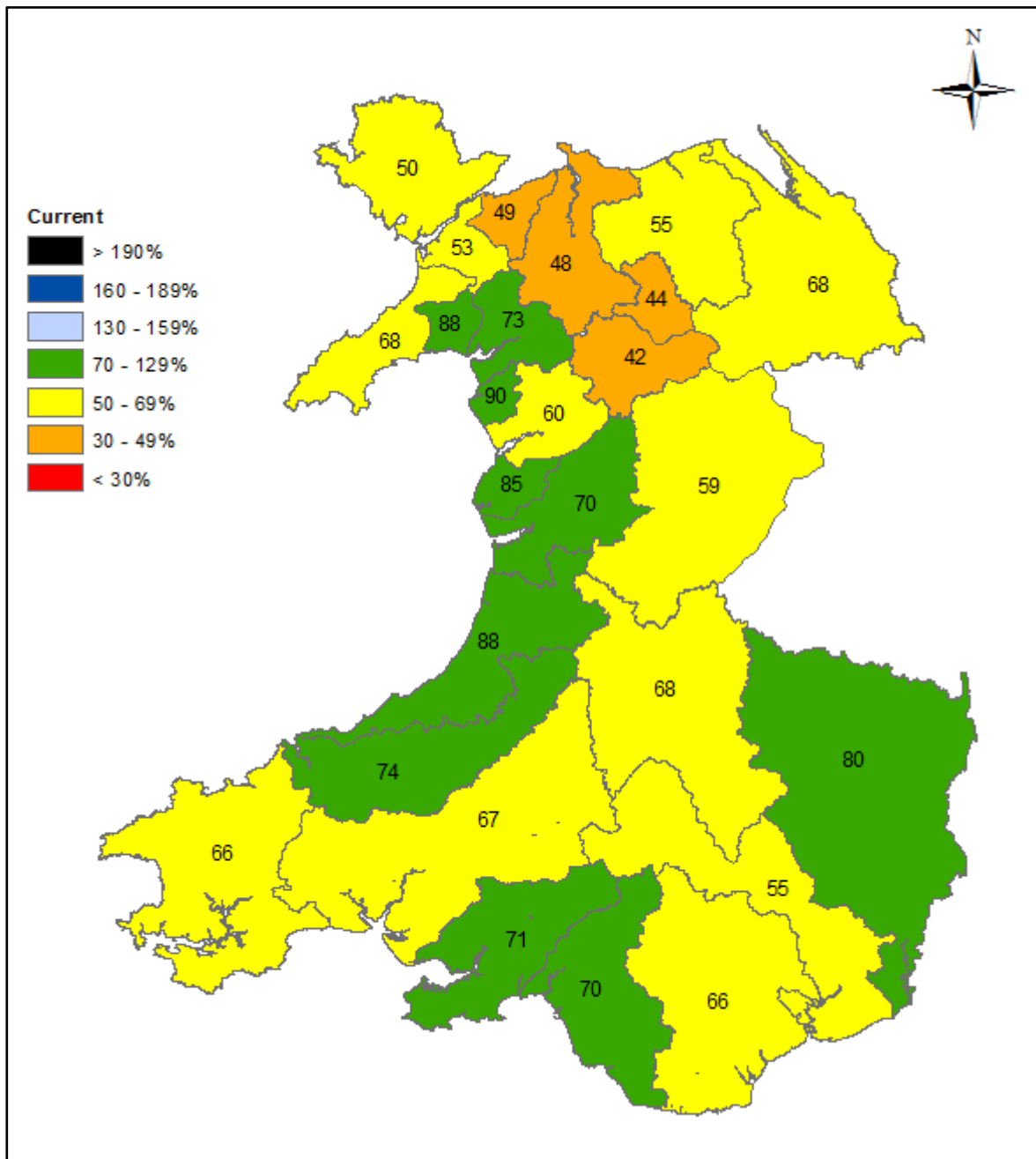


Figure 2: Calculated catchment average January rainfall totals as a percentage of the 1961-90 January long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

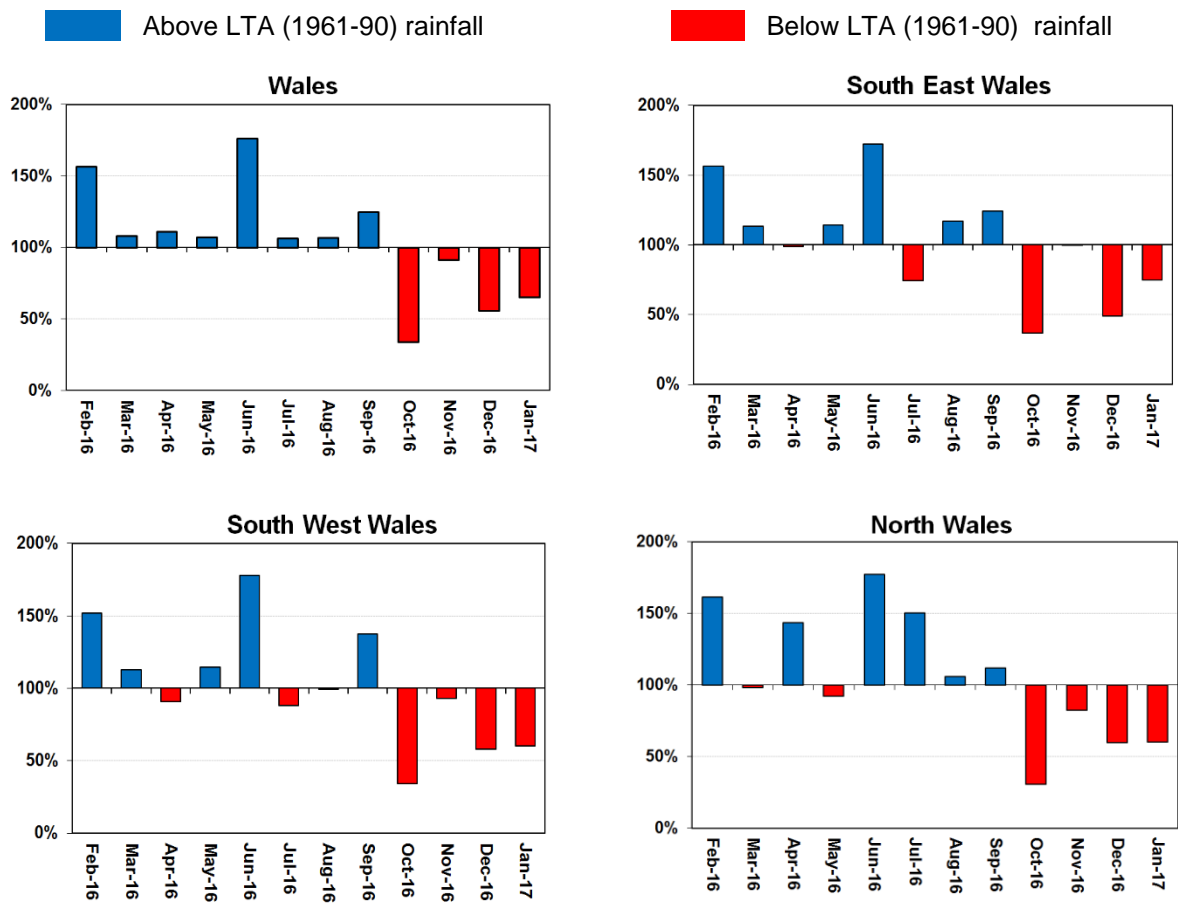
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Rainfall Charts

Figure 3: Rainfall Charts: National and Areas

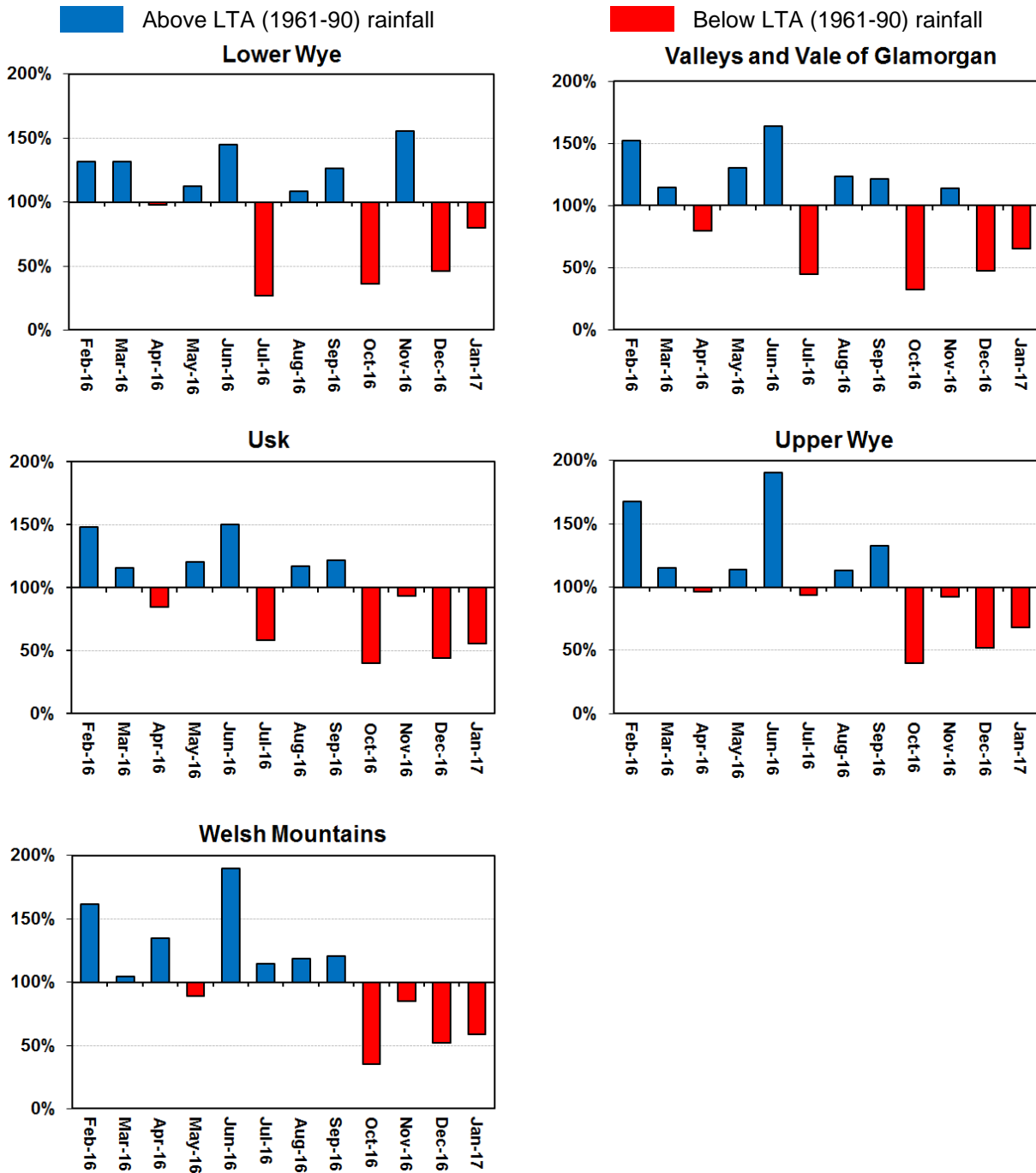


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

All data are provisional and Jul be subject to revision.

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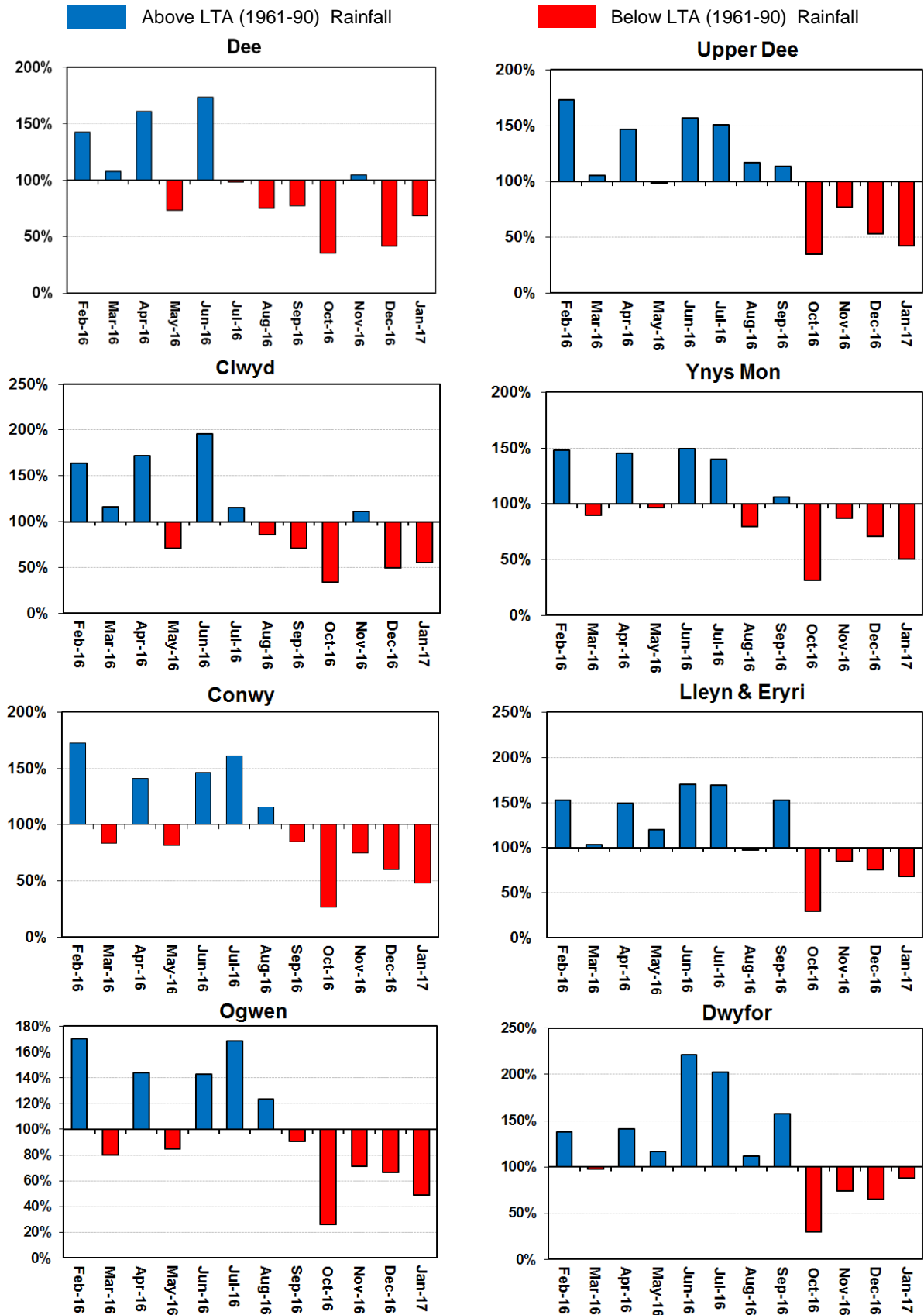
Figure 4: Rainfall Charts: South East Wales



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).

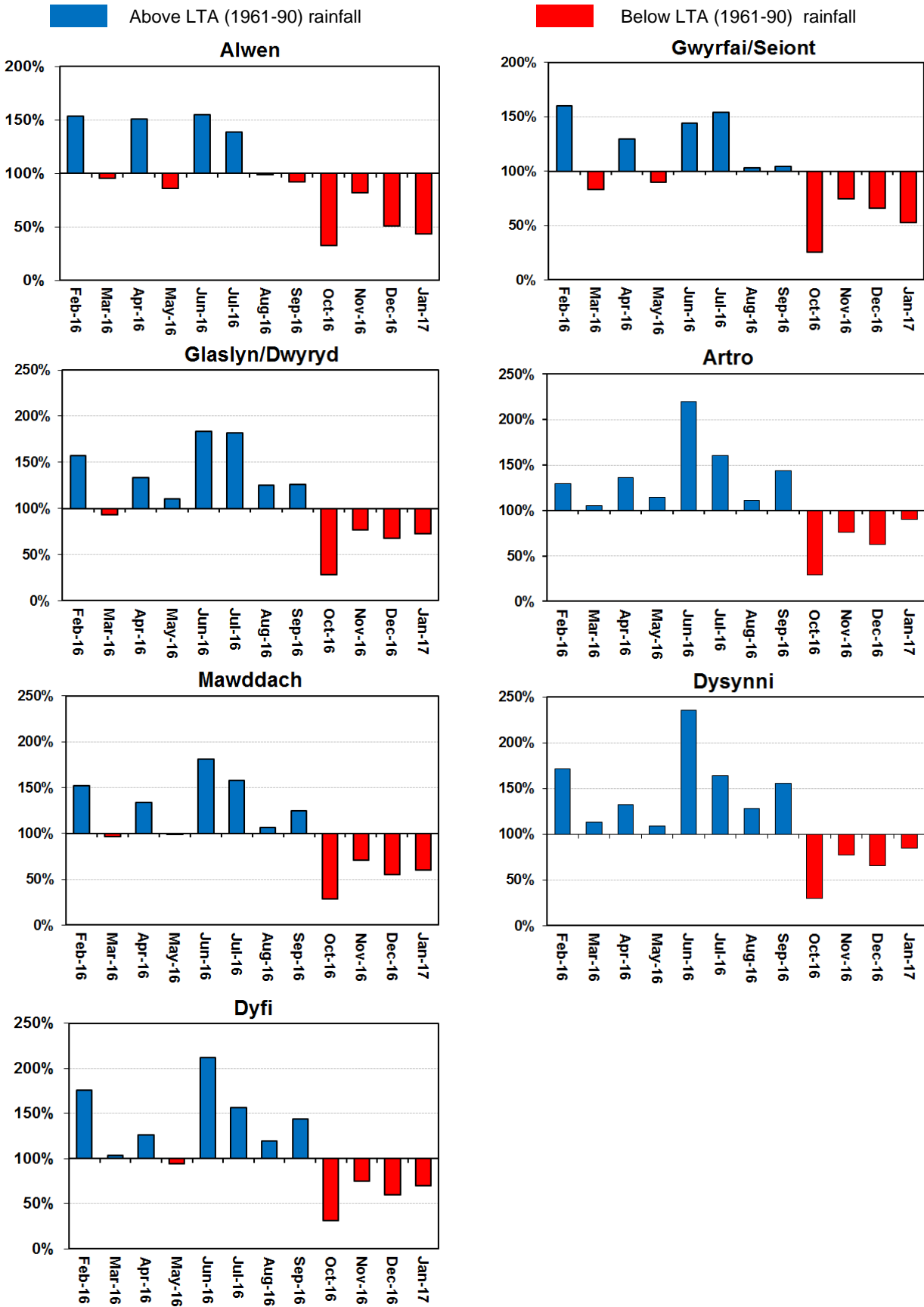
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Figure 5: Rainfall Charts: North Wales



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).

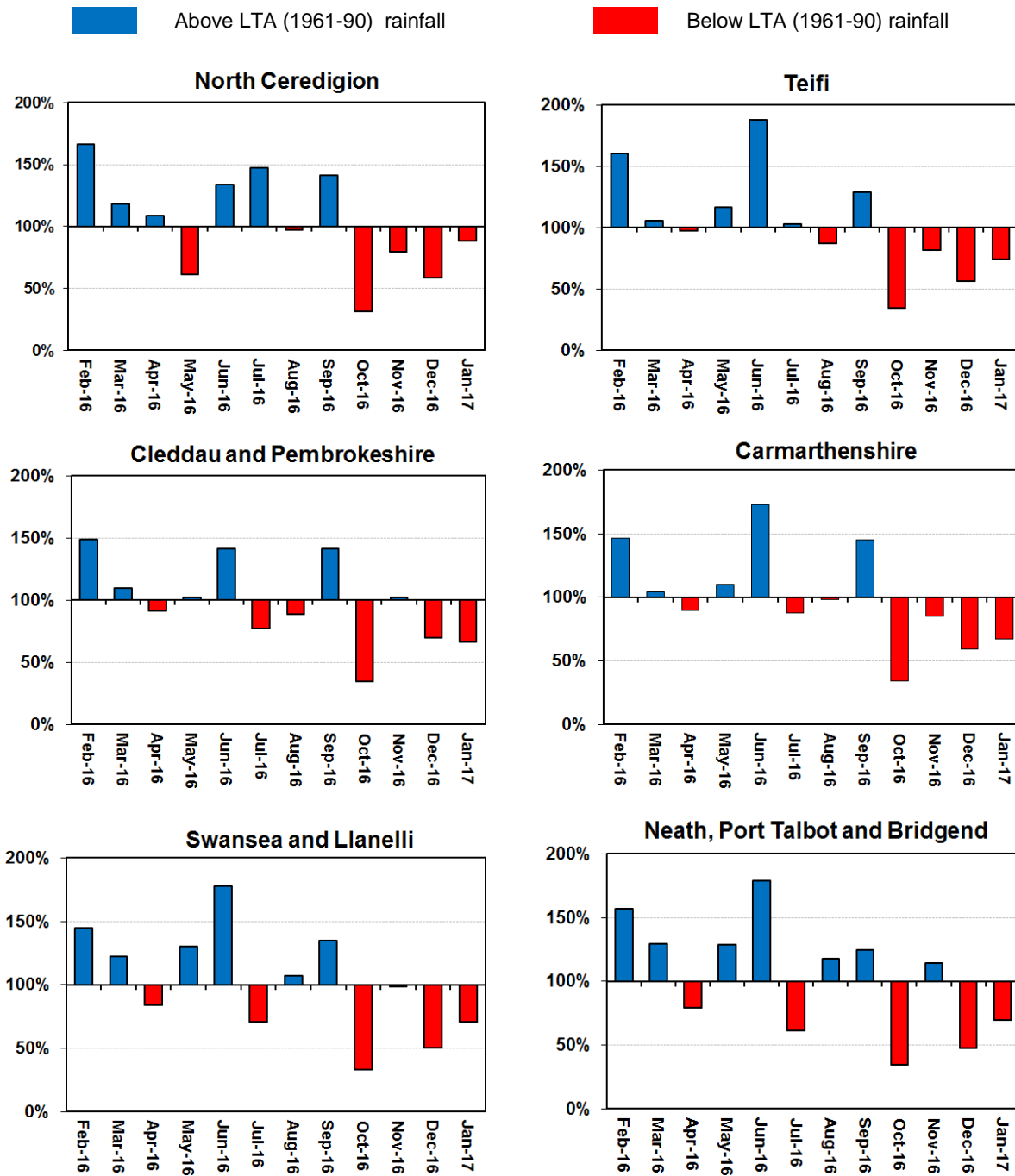
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Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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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)

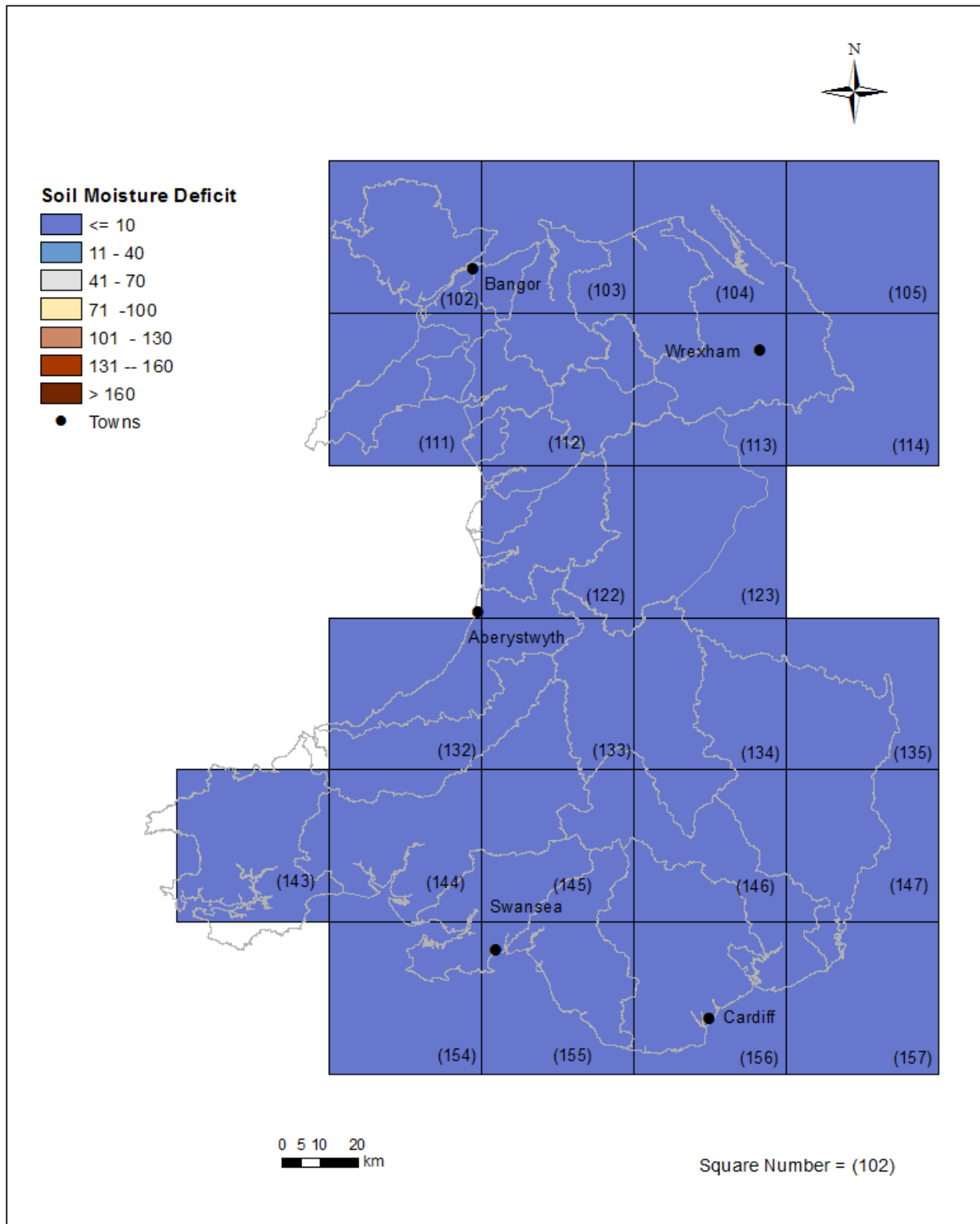


Figure 7: MORECS soil moisture deficits (mm) for January for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

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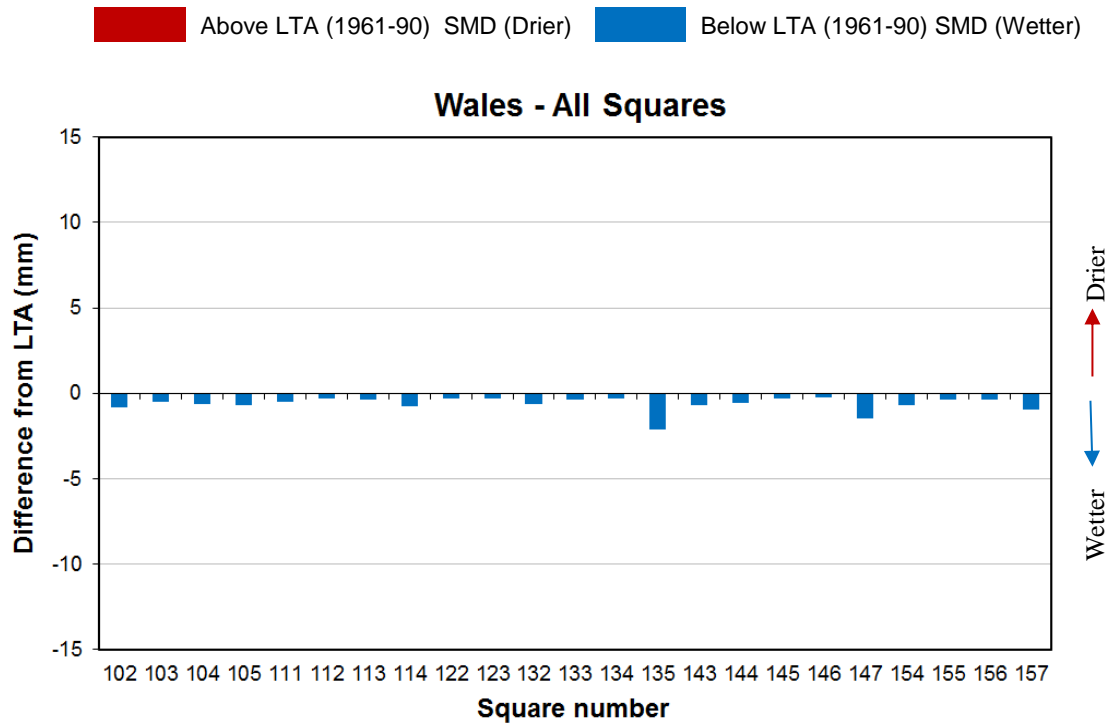


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for July for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

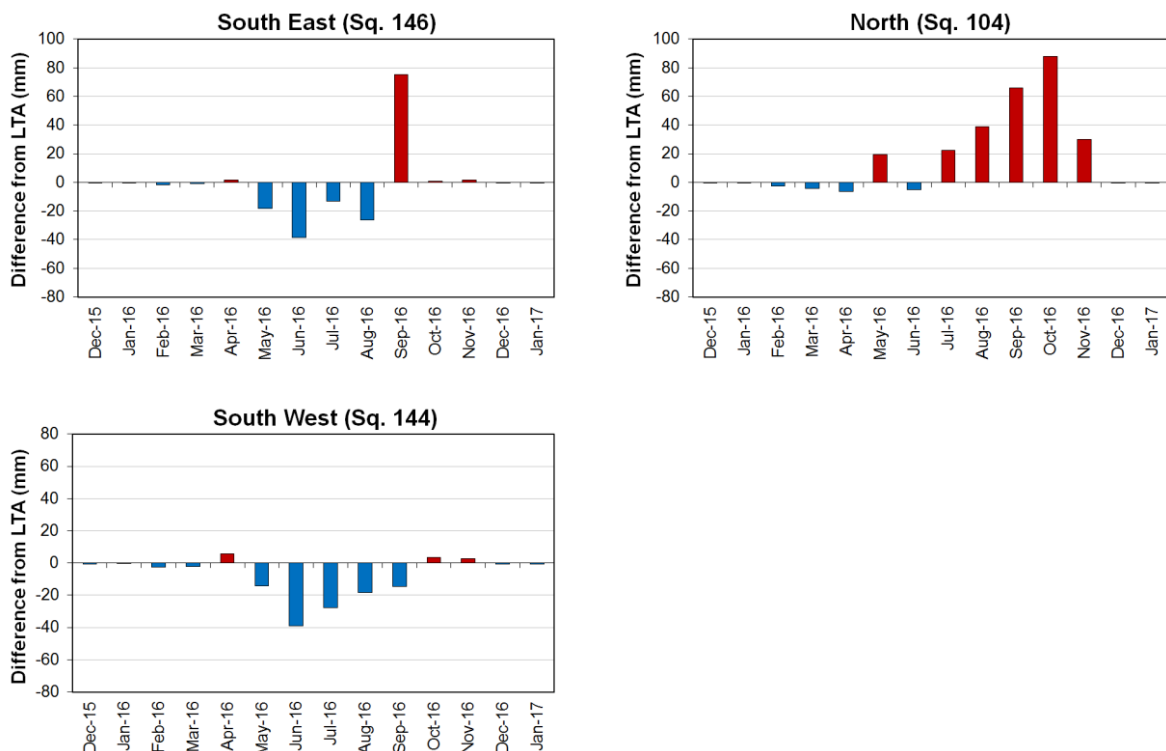


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales.)

River Flow

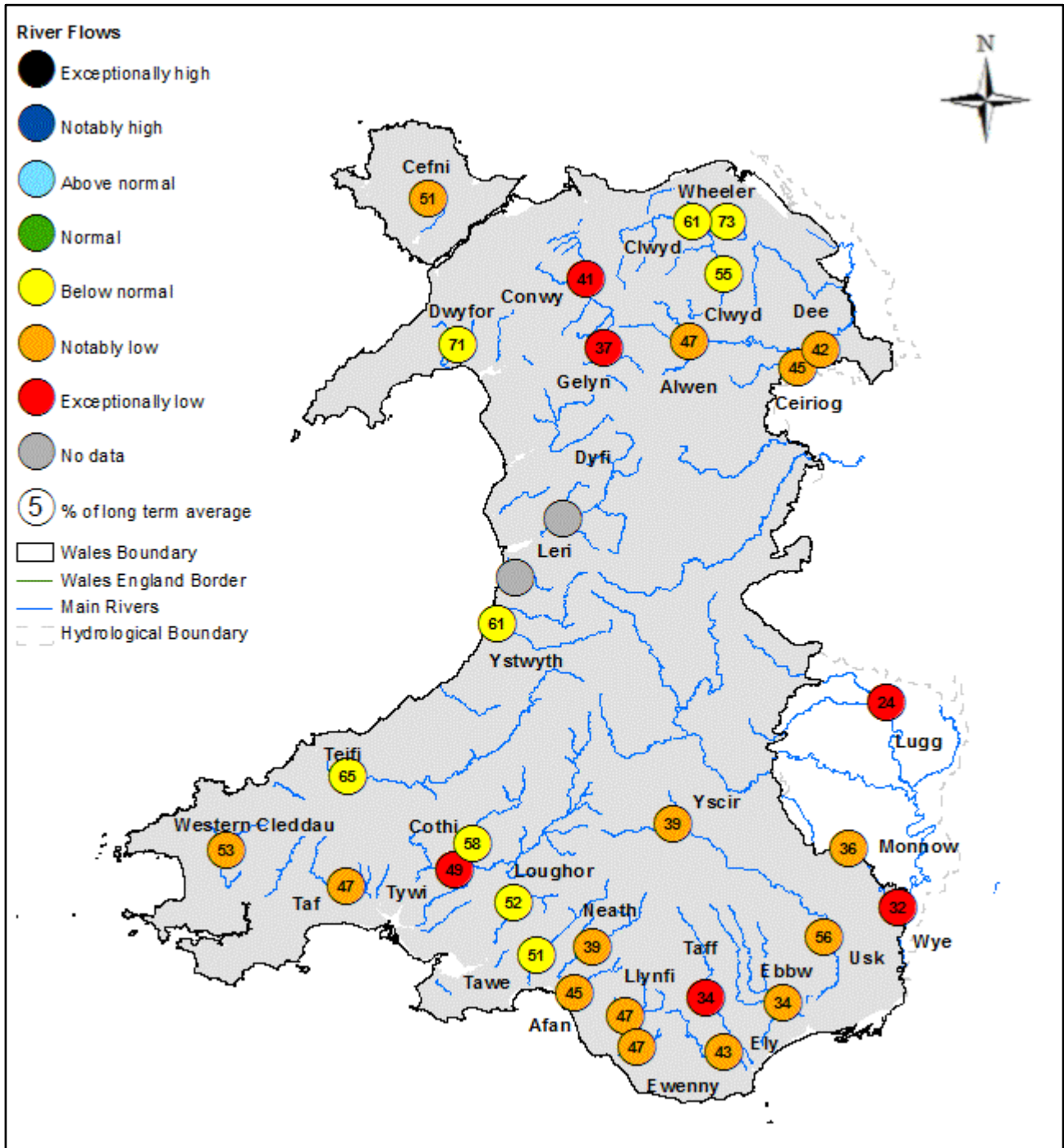


Figure 10: Monthly mean river flow for January, classed relative to analysis of historic January monthly means (Source: Natural Resources Wales).

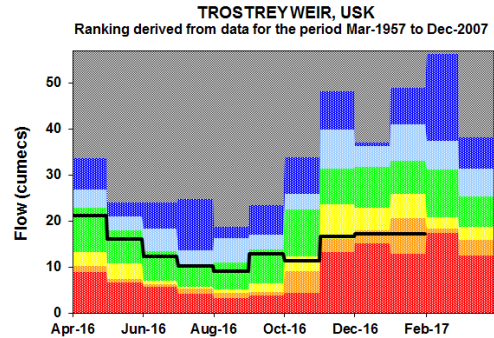
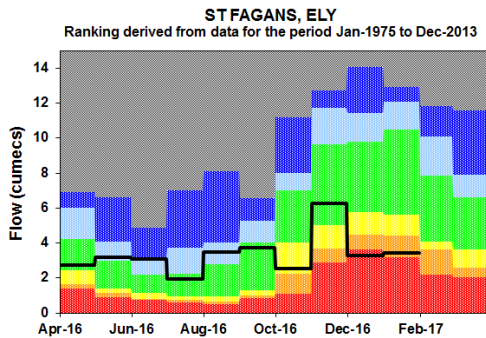
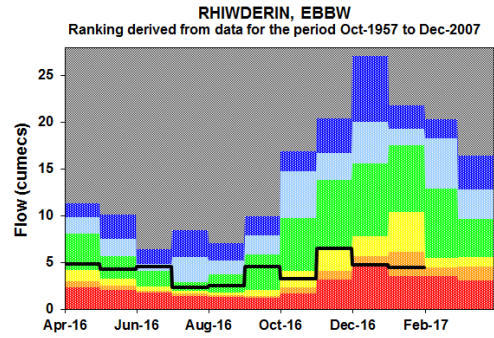
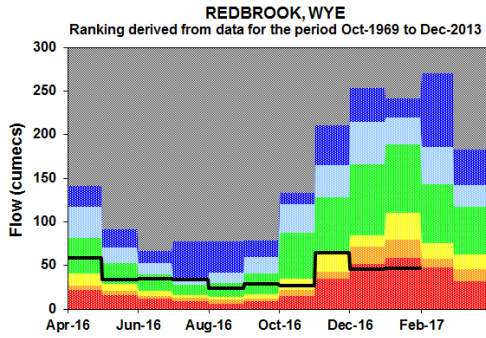
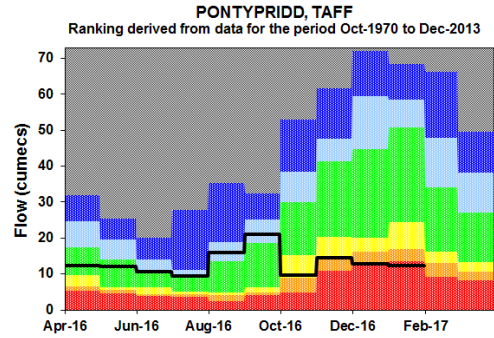
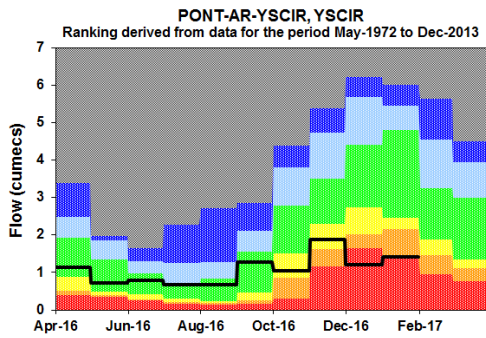
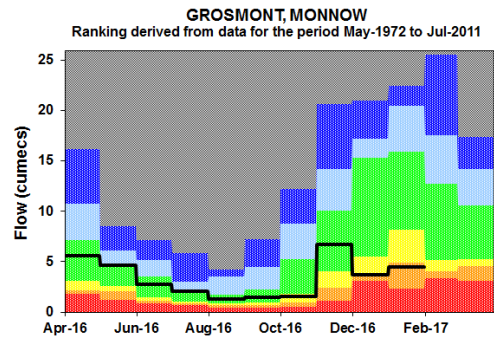
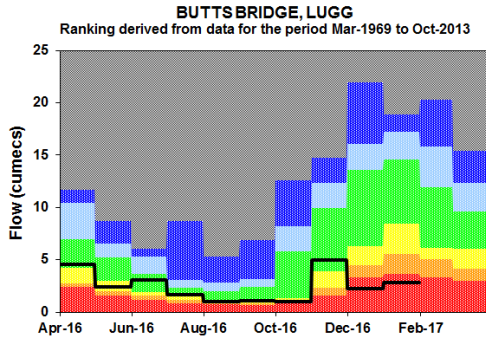
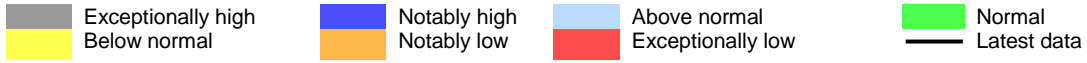
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SITE NAME	RIVER	January 2017			January 2016		January LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Monthly Min (m3/s)	Monthly Max (m3/s)
River Flow Sites : South East Area									
Butts Bridge	Lugg	Exceptionally low	24%	2.79	184%	21.19	11.51	2.48	19.90
Grosmont	Monnow	Notably low	36%	4.46	141%	17.30	12.26	1.51	23.40
Pont ar Yscir	Yscir	Notably low	39%	1.41	161%	5.77	3.59	0.43	6.19
Pontypridd	Taff	Exceptionally low	34%	12.40	211%	77.48	36.72	5.08	68.80
Redbrook	Wye	Exceptionally low	32%	46.60	163%	369.00	145.55	18.30	266.00
Rhiwderin	Ebbw	Notably low	34%	4.49	207%	27.22	13.17	2.53	24.60
St Fagans	Ely	Notably low	43%	3.41	196%	15.66	7.99	1.47	13.10
Trostrey Weir	Usk	Notably low	56%	17.10	346%	105.40	30.46	7.33	62.40
River Flow Sites : North Area									
Bodfari	Wheeler	Below normal	73%	0.84	193%	2.22	1.15	0.46	1.88
Bodffordd	Cefni	Notably low	51%	0.39	180%	1.37	0.76	0.12	1.35
Brynkinalt Weir	Ceiriog	Notably low	45%	2.47	168%	9.27	5.53	1.12	10.50
Cwmlanerch	Conwy	Exceptionally low	41%	12.40	195%	59.30	30.39	3.62	59.80
Cynefail	Gelyn	Exceptionally low	37%	0.41	160%	1.79	1.12	0.16	2.27
Dol y Bont	Leri						2.38	0.41	3.93
Druid	Alwen	Notably low	47%	4.05	168%	14.60	8.70	1.26	18.30
Dyfi bridge	Dyfi						36.76	3.48	68.80
Garndolbenmaen	Dwyfor	Below normal	71%	2.61	180%	6.62	3.68	0.80	6.47
Manley Hall	Dee	Notably low	42%	22.40	160%	85.80	53.55	8.42	96.90
Pont y Cambwll	Clwyd	Below normal	61%	7.03	219%	25.10	11.48	2.19	20.70
Ruthin Weir	Clwyd	Below normal	55%	1.56	193%	5.49	2.84	0.55	5.44
River Flow Sites : South West Area									
Capel Dewi	Tywi	Exceptionally low	49%	34.10	181%	125.18	69.23	7.24	123.00
Clog y Fran	Taf	Notably low	47%	6.40	216%	29.41	13.59	2.53	25.90
Coytrahen	Llynfi	Notably low	47%	1.69	191%	6.81	3.56	0.52	6.67
Felin Mynachdy	Cothi	Below normal	58%	11.30	178%	34.88	19.64	1.74	37.60
Glanteifi	Teifi	Below normal	65%	32.80	188%	94.96	50.51	6.18	106.00
Keepers Lodge	Ewenny	Notably low	47%	1.41	176%	5.34	3.03	0.70	5.95
Marcroft	Afan	Notably low	45%	3.51	169%	13.30	7.85	1.10	13.80
Pont Llolwyn	Ystwyth	Below normal	61%	6.03	149%	14.67	9.83	1.14	18.30
Treffgarne *	Western Cleddau	Notably low	53%	3.53			6.61	1.40	14.33
Resolven	Neath	Notably low	39%	6.34	202%	32.75	16.20	1.78	33.70
Tir-y-Dail	Loughor	Below normal	52%	1.88	190%	6.92	3.64	0.57	6.83
Ynystanglws	Tawe	Below normal	51%	9.84	202%	39.36	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.)

River Flow Charts

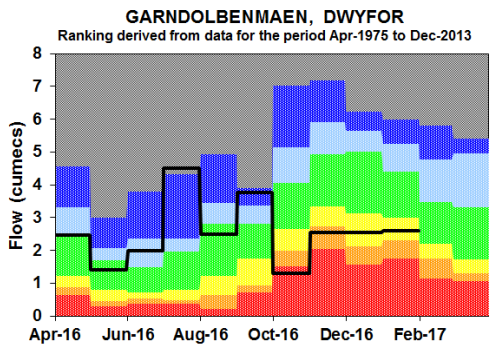
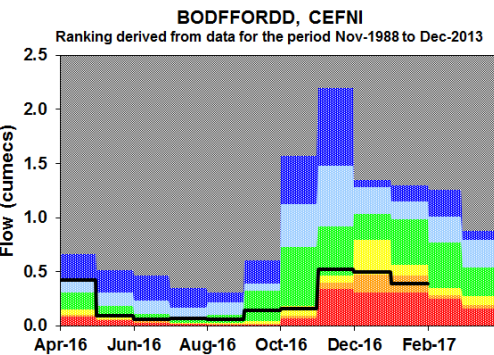
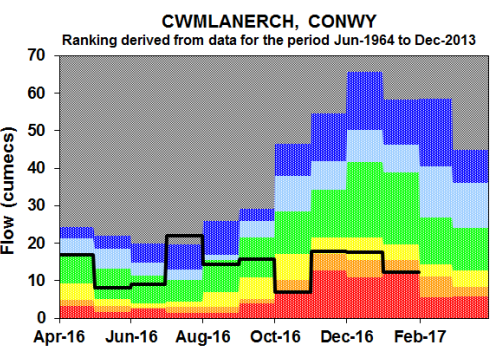
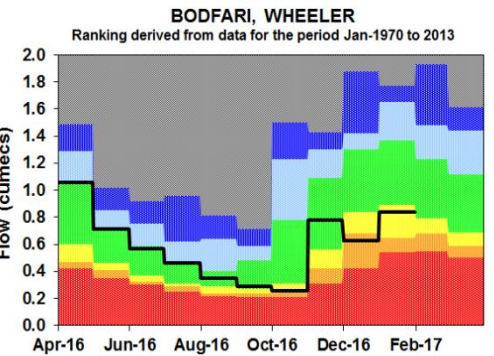
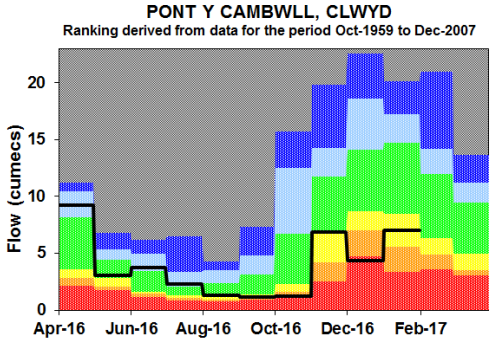
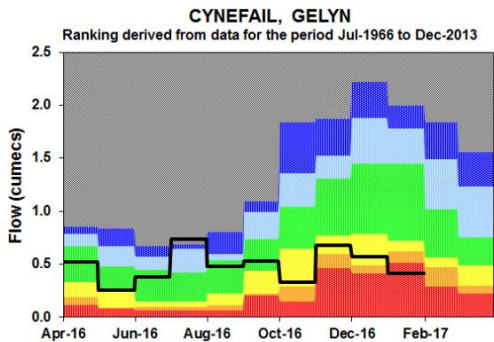
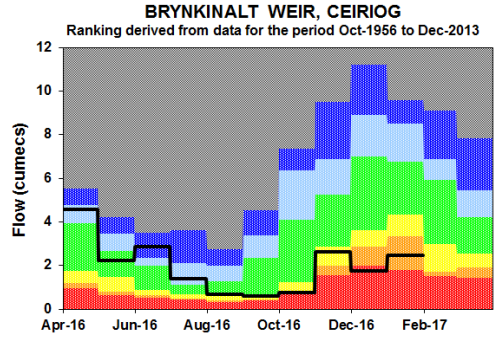
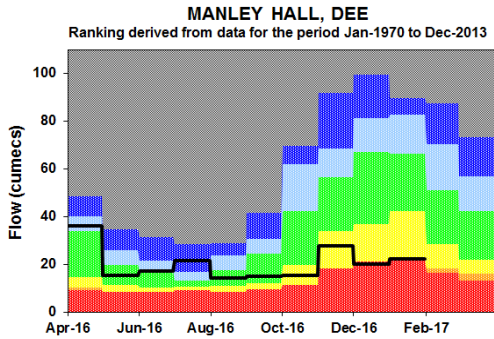
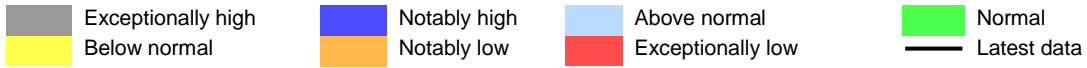
Figure 12: River Flow Charts: South East Wales



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

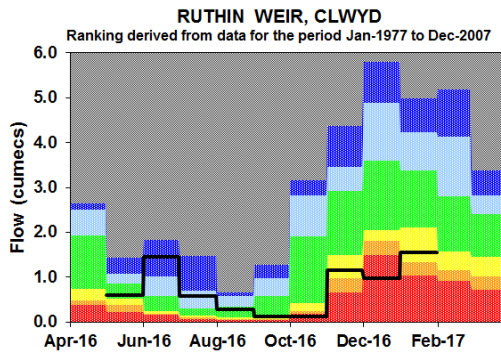
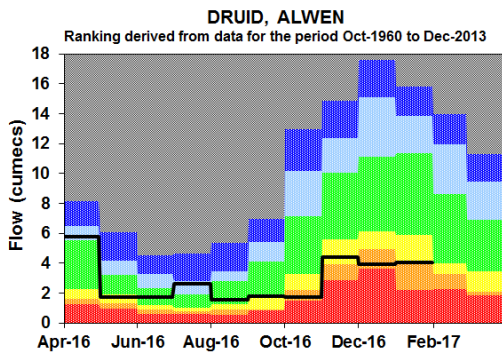
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Figure 13: River Flow Charts: North Wales



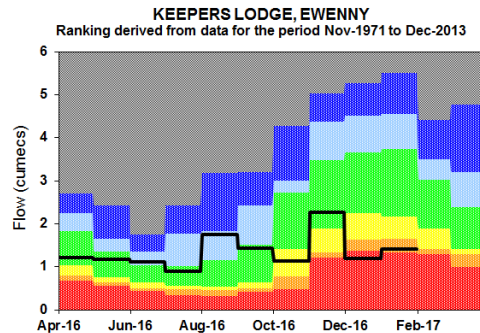
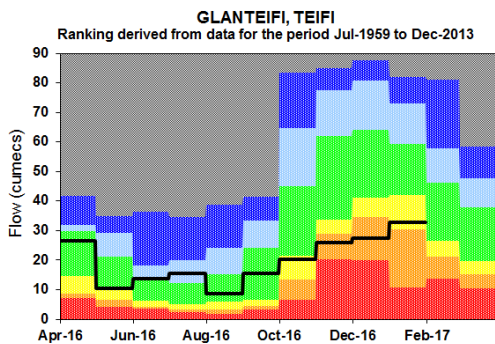
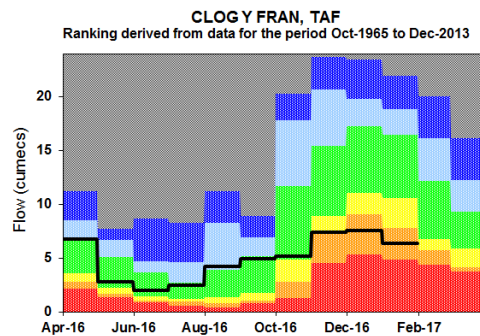
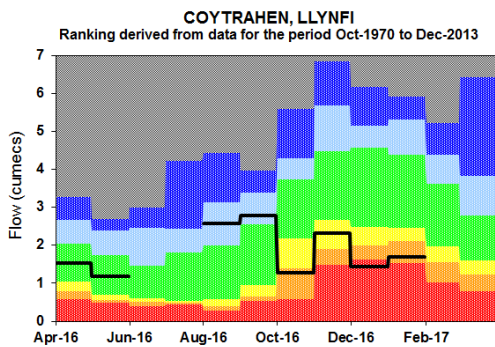
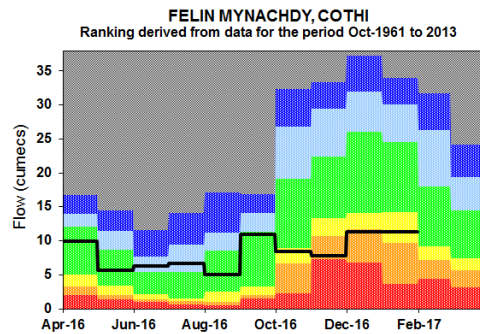
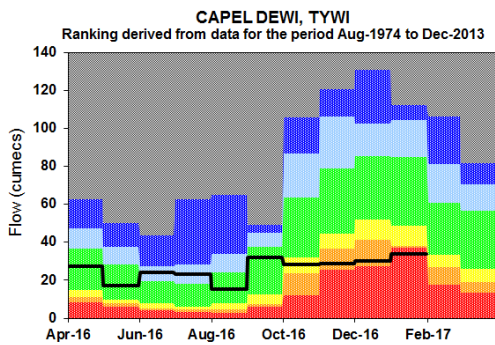
Monthly mean river flows for the last 10 months classed relative to the analysis of historic river levels (Source: Natural Resources Wales).

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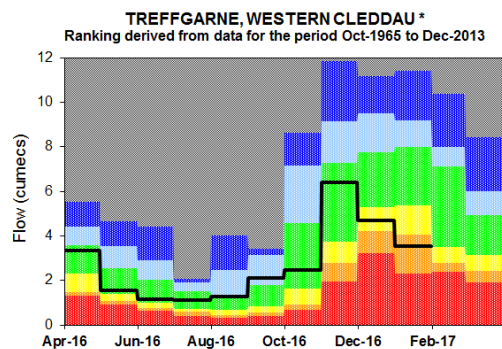
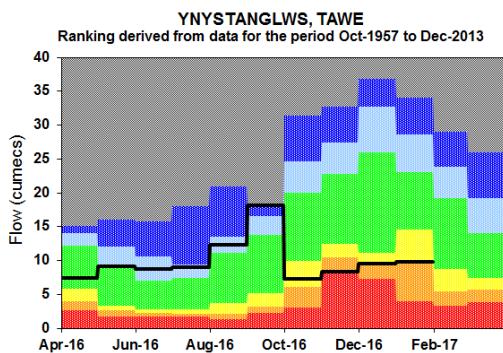
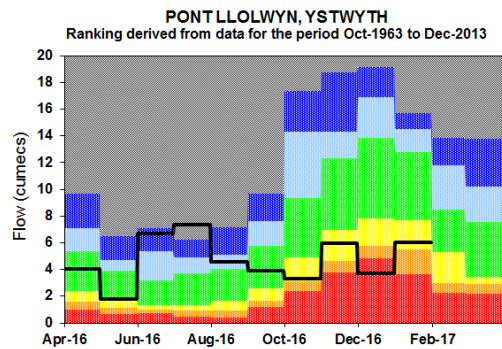
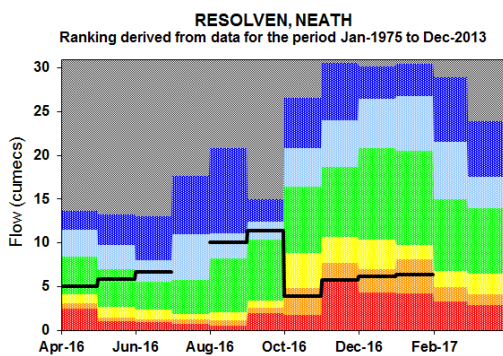
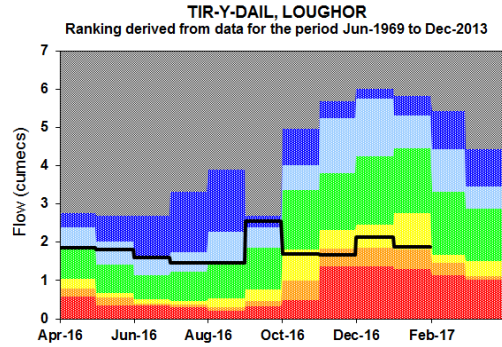
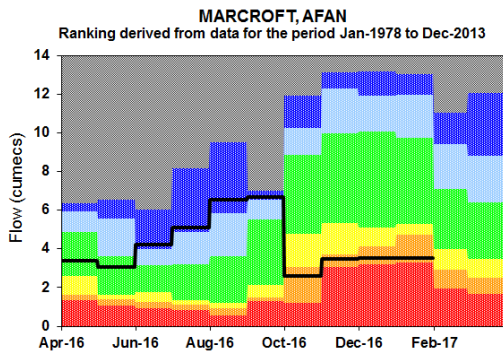
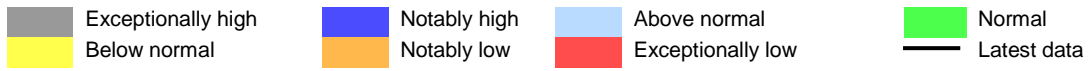
(Please note there was no data available at Ruthin Weir for April 2016)

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

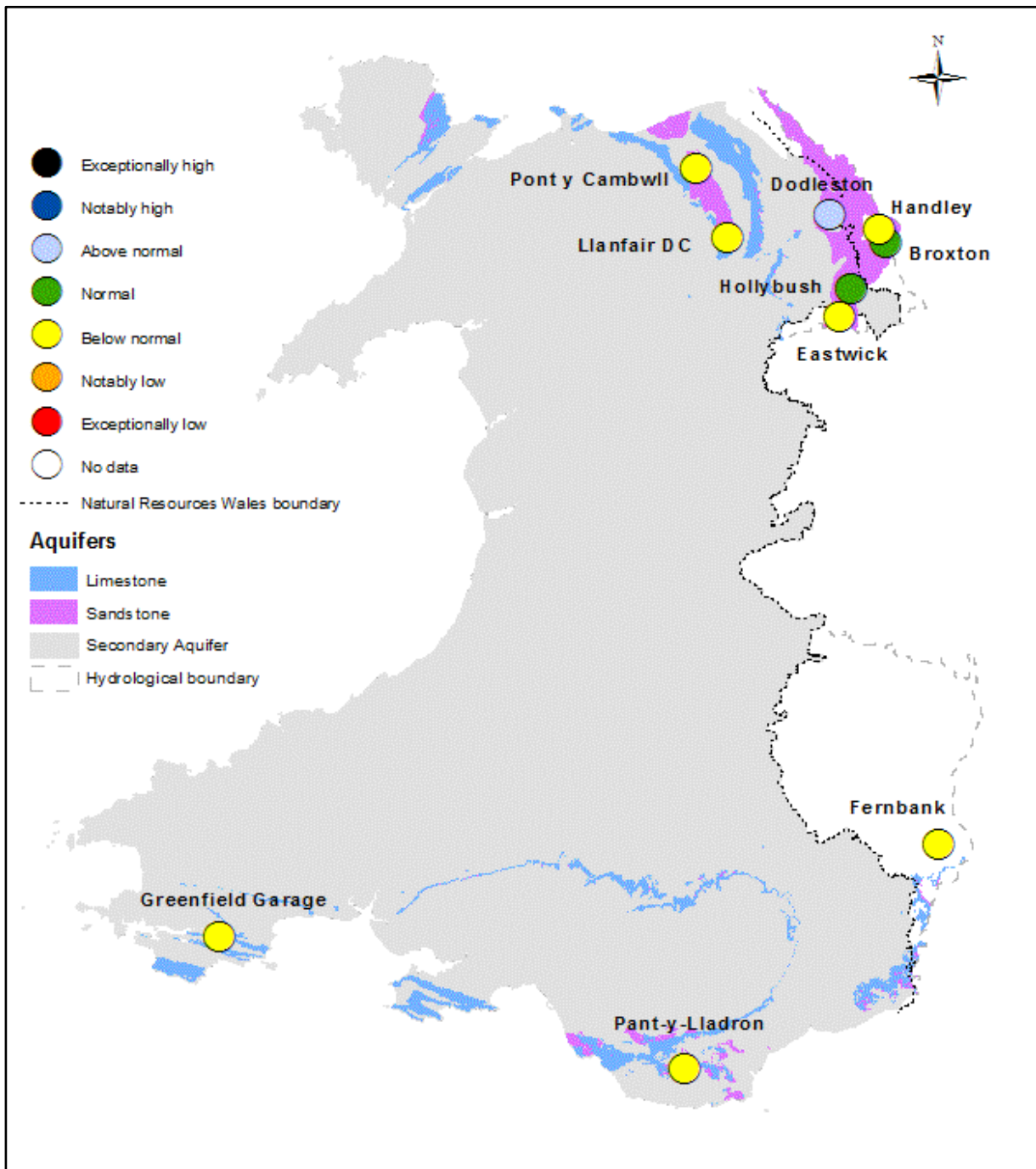
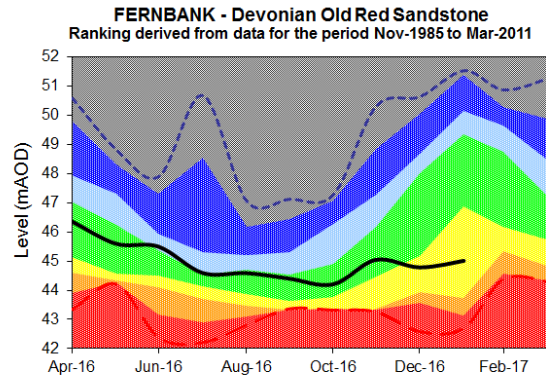
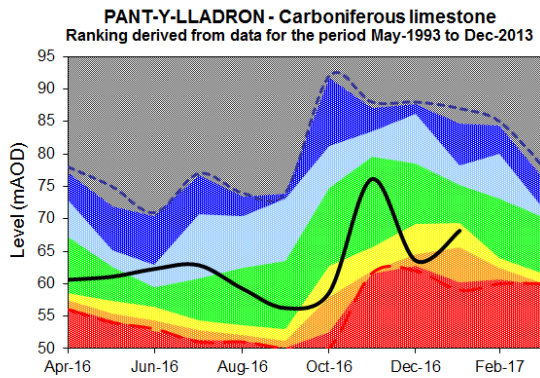
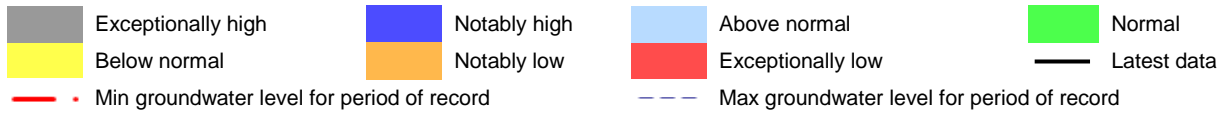


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic January groundwater levels (Source: Natural Resources Wales and Environment Agency).

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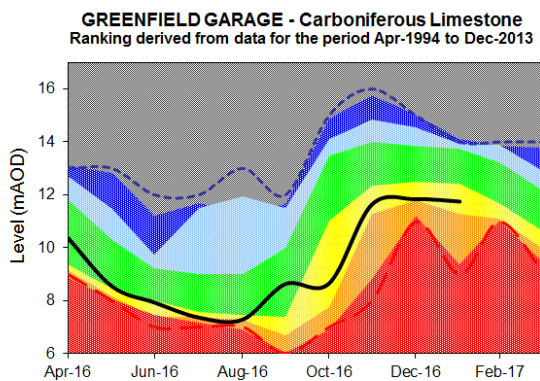
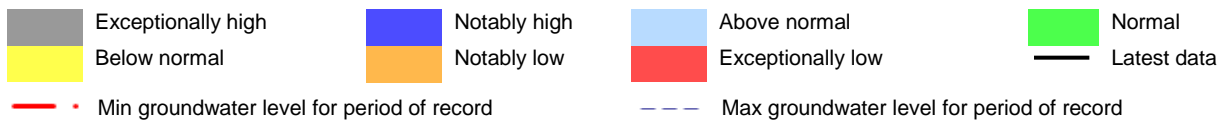
Groundwater charts

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).

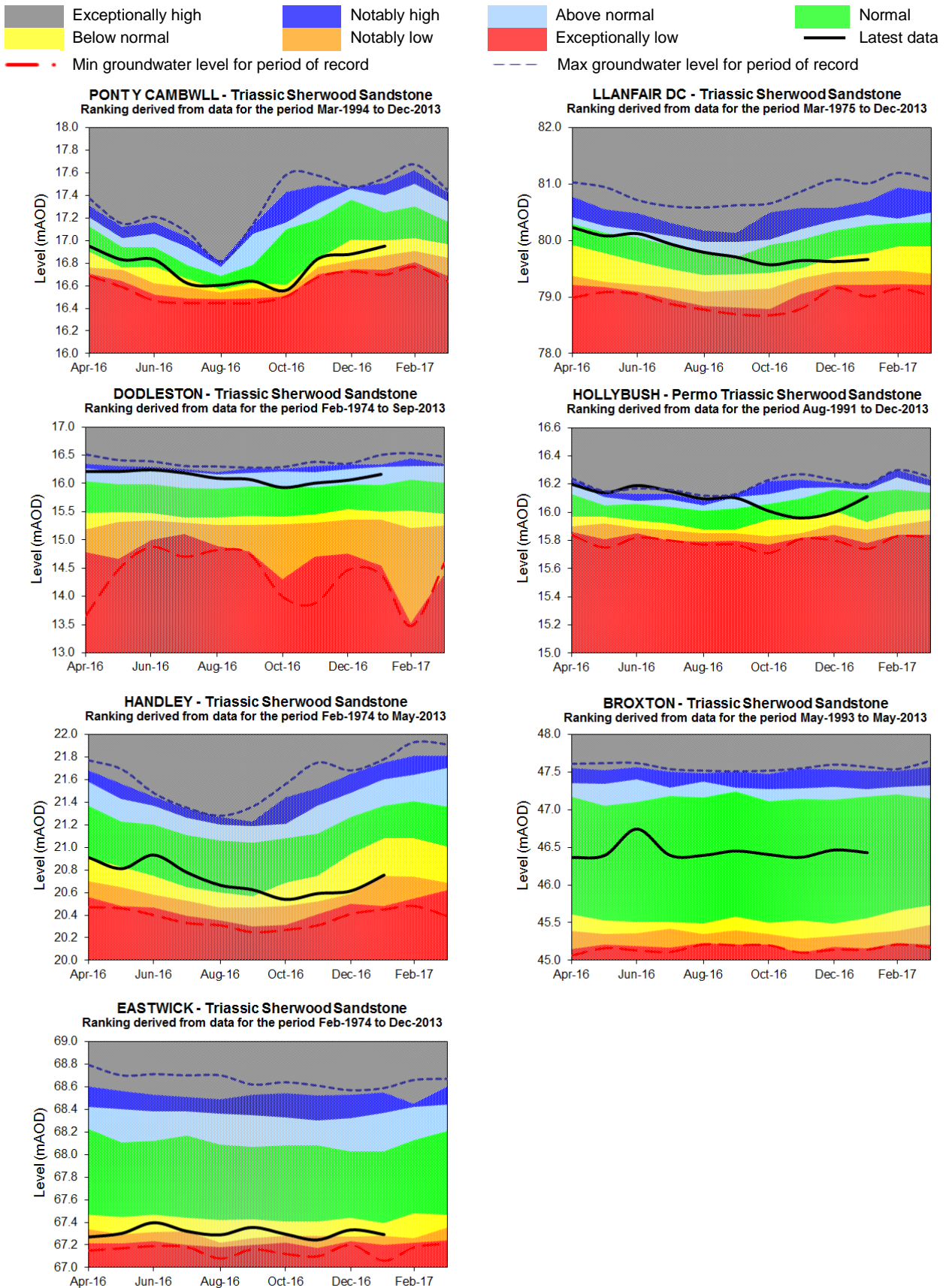
Figure 17: Groundwater level charts: South West Wales



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

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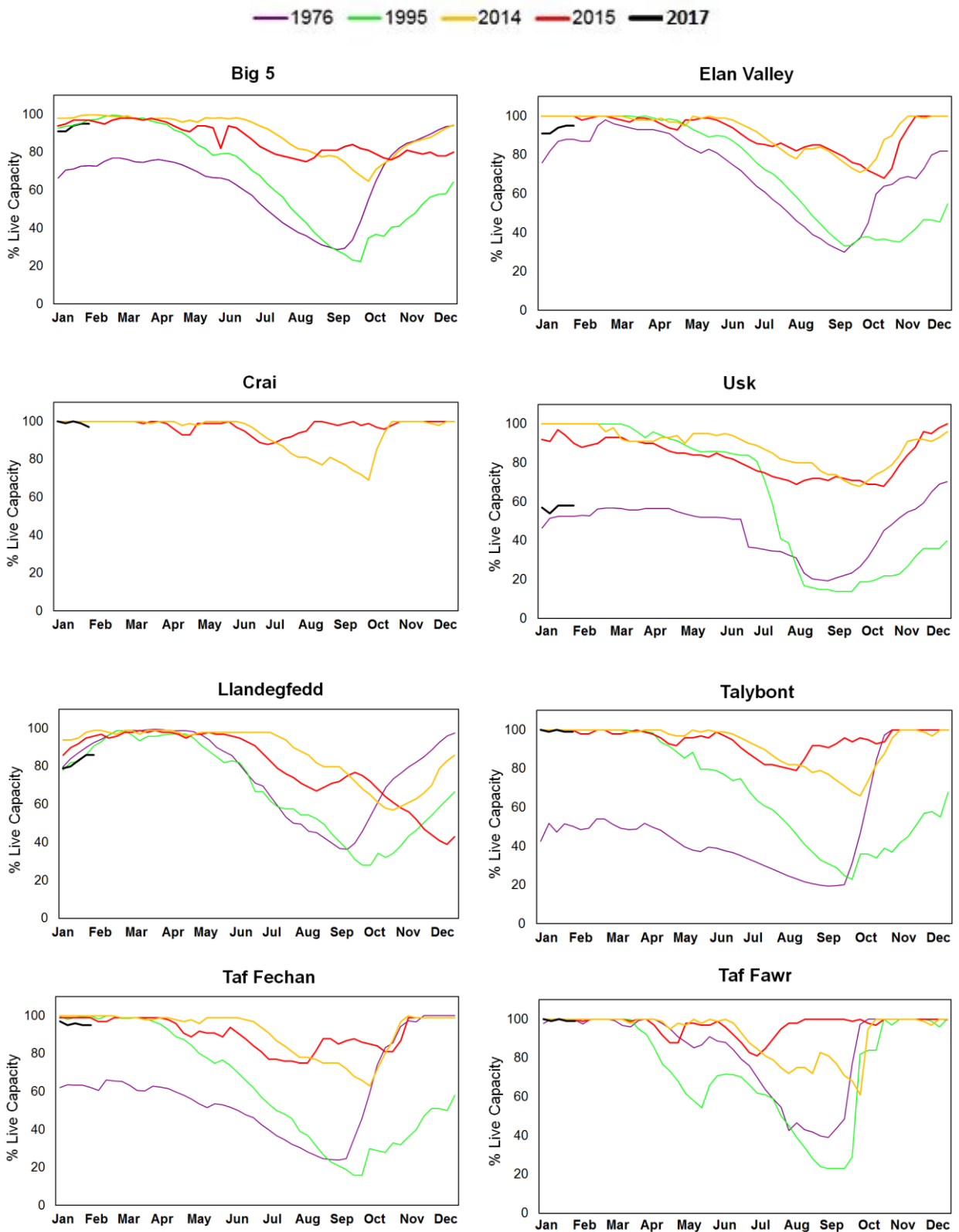
Figure 18: Groundwater level charts: North Wales



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

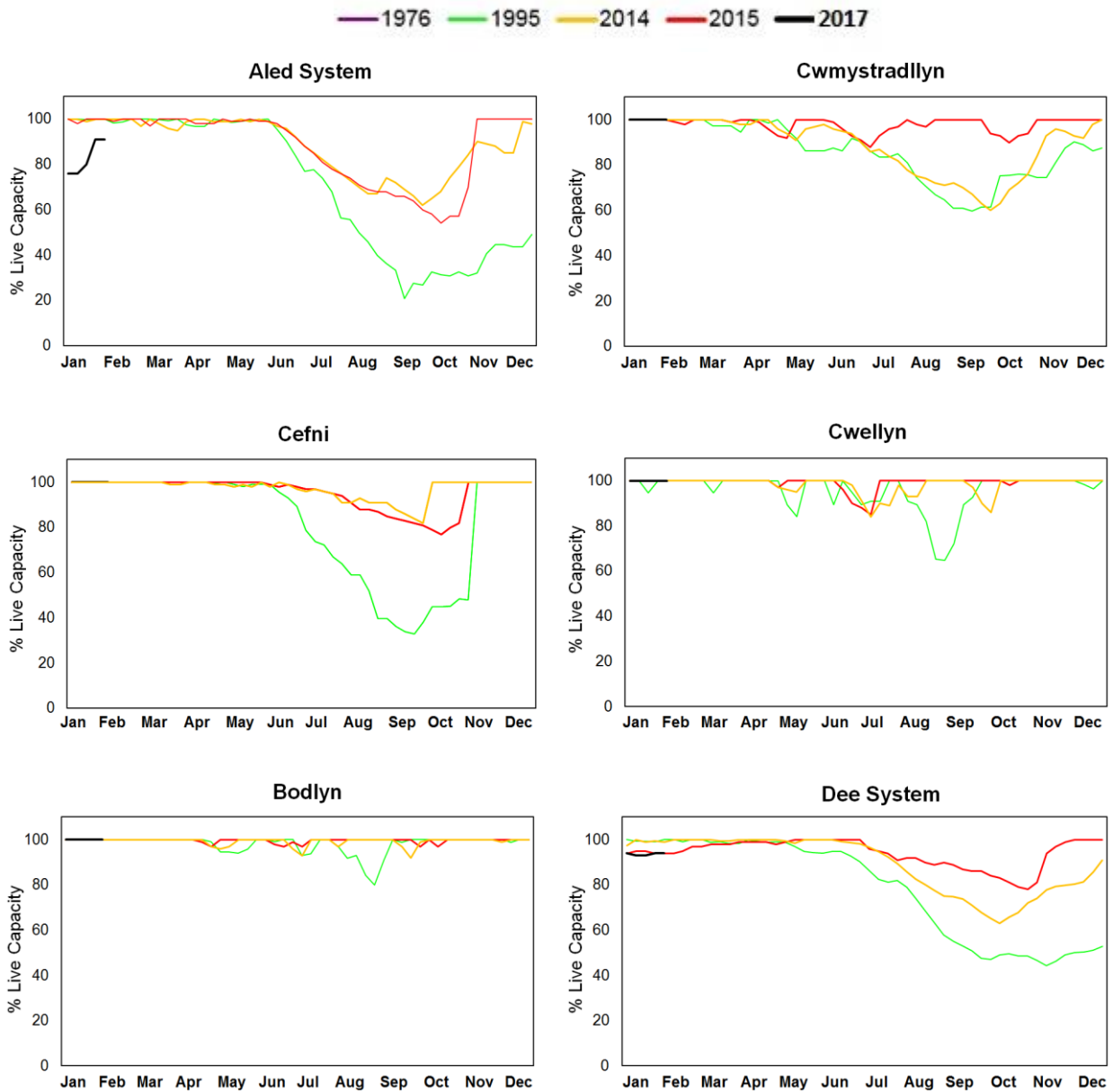


Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water)

(Please note that the reservoirs Llandegfedd stock (64%) and Usk stock (60%) were low at the end of January due to maintenance work being carried out on these reservoirs)

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Figure 20: Reservoirs charts: North Wales

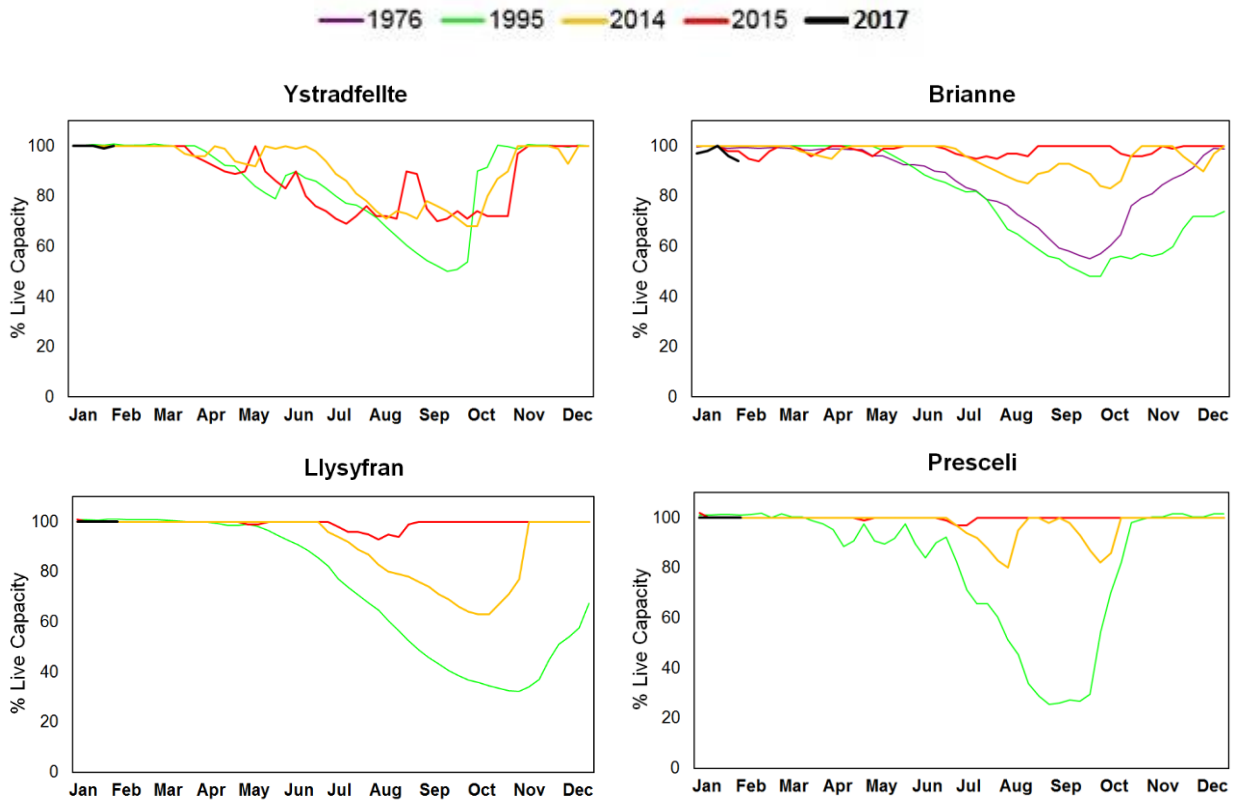


Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water).

(Please note that the reservoir Aled system stock was low (78%) at the end of January due to maintenance work being 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 Ystradfellite stock was low (68%) at the end of January due to maintenance 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).