

Natural Resources Wales

- The monthly rainfall total for Wales during April was 34% of the Long Term Average (LTA, 1961-90). South East, South West and North Wales received 28%, 35% and 37% of the LTA, respectively. It was the driest April for the last 10 years since 2008 for Wales.
- At the end of April, soil moisture deficit (SMD) values across Wales were from 10.2 to 60.4mm for all MORECS squares. Soil was drier than the LTA for all the squares for April.
- For river flows in Wales, 20 out of 30 indicator sites (which had flow data available) were classed as *Normal*, 9 were classed as *Below normal* and 1 site was classed as *Notably low* for April.
- The overall cumulative reservoir storage across the indicator sites was greater than 90% except 2 reservoirs (Usk and Crai) at the end of April and all reservoirs were within normal operating ranges.

Rainfall*

The monthly rainfall total for Wales was 34% of the LTA for April. The percentage of rainfall recorded in catchments compared with the LTA across Wales was between 22% (Usk) and 43% (Clwyd). The rainfall total for Wales was 53.8mm less than the April LTA. For South East, South West and North Wales the rainfall totals were 28%, 35% and 37% of 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

All 23 MORECS squares had SMD values which were between 10.2 and 60.4mm. Soil was drier than the long term average for all the squares for April.

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 between normal and notably low for all the indicator sites across Wales. 20 sites (out of 30 sites which had flow data) were classed as *Normal* and 9 were classed as *Below normal*. The remaining 1 site was classed as *Notably low*.

South East: Flows in the area ranged from 57% (River Lugg at Butts Bridge) to 84% (River Usk at Trostrey Weir) of the April LTA values.

South West: The river flows within this area ranged from 57% (River Neath at Resolven) to 109% (River Taf at Clog y Fran) of the April LTA values.

North: Flows in the area ranged from 34% (River Gelyn at Cynefail) to 76% (River Wheeler at Bodfari) of the April 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 April at all indicator sites (10 sites) were classed between *Notably low* (Eastwick) to *Above normal* (Dodleston). 5 sites were classed as *Normal* (Pant-y-Lladron, Fernbank, Greenfield Garage, Hollybush and Broxton) and 3 sites were classed as *Below normal* (Pont y Cambwll, Llanfair DC and Handley).

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

Reservoir Storage

At the end of April most of the indicator reservoirs (16 out of 18) were greater than 90% full and the remaining two reservoir (Usk and Crai) were 81% and 89% full. All of them were in normal range for the time of year.

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

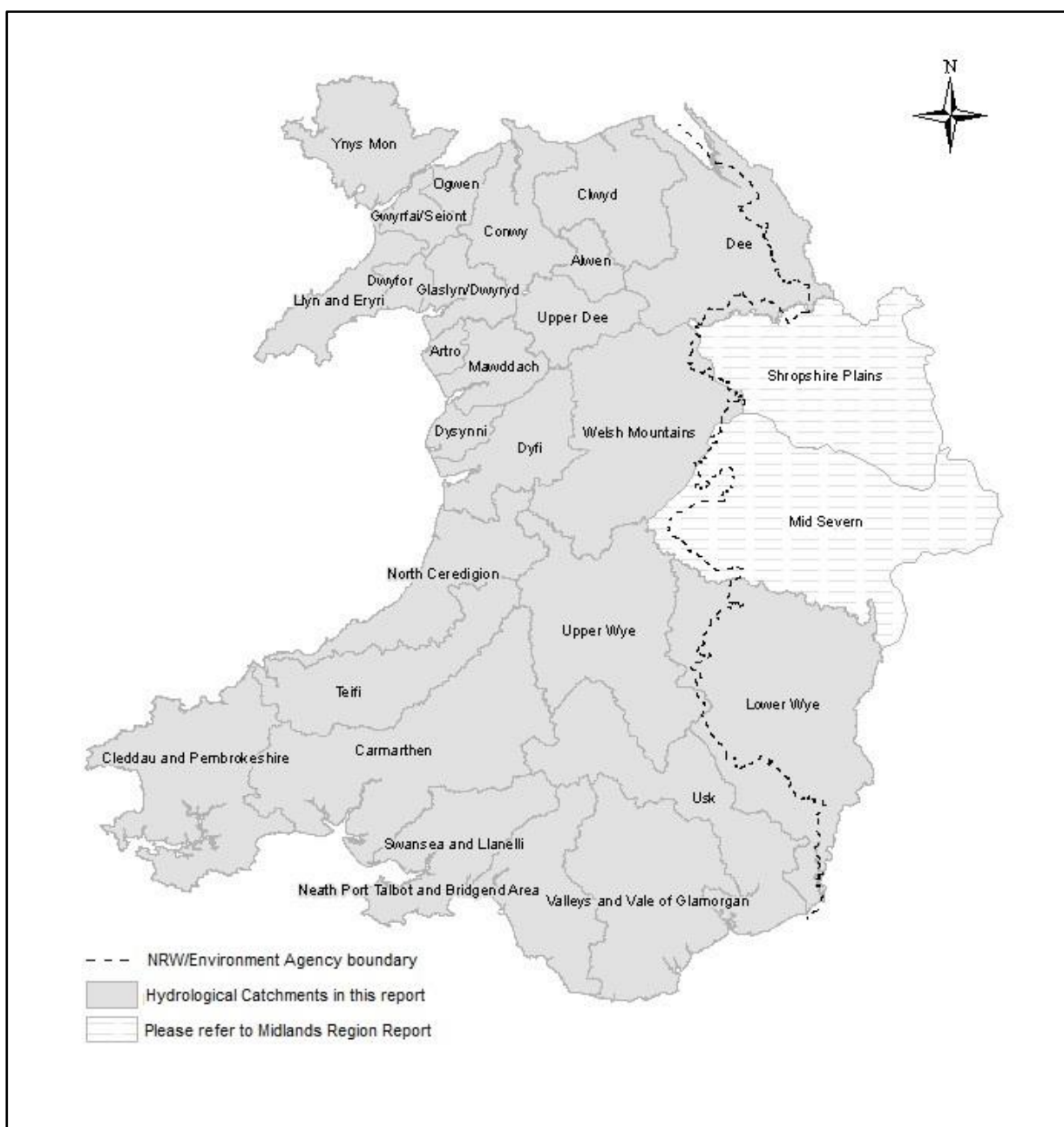


Figure 1: The Natural Resources Wales Water Situation Report features sites in the catchments shown. Parts of the Shropshire Plains and Mid Severn catchments are within Wales. For full information on these catchments, please see the Environment Agency Midlands Water Situation Report.

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](#)

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Rainfall

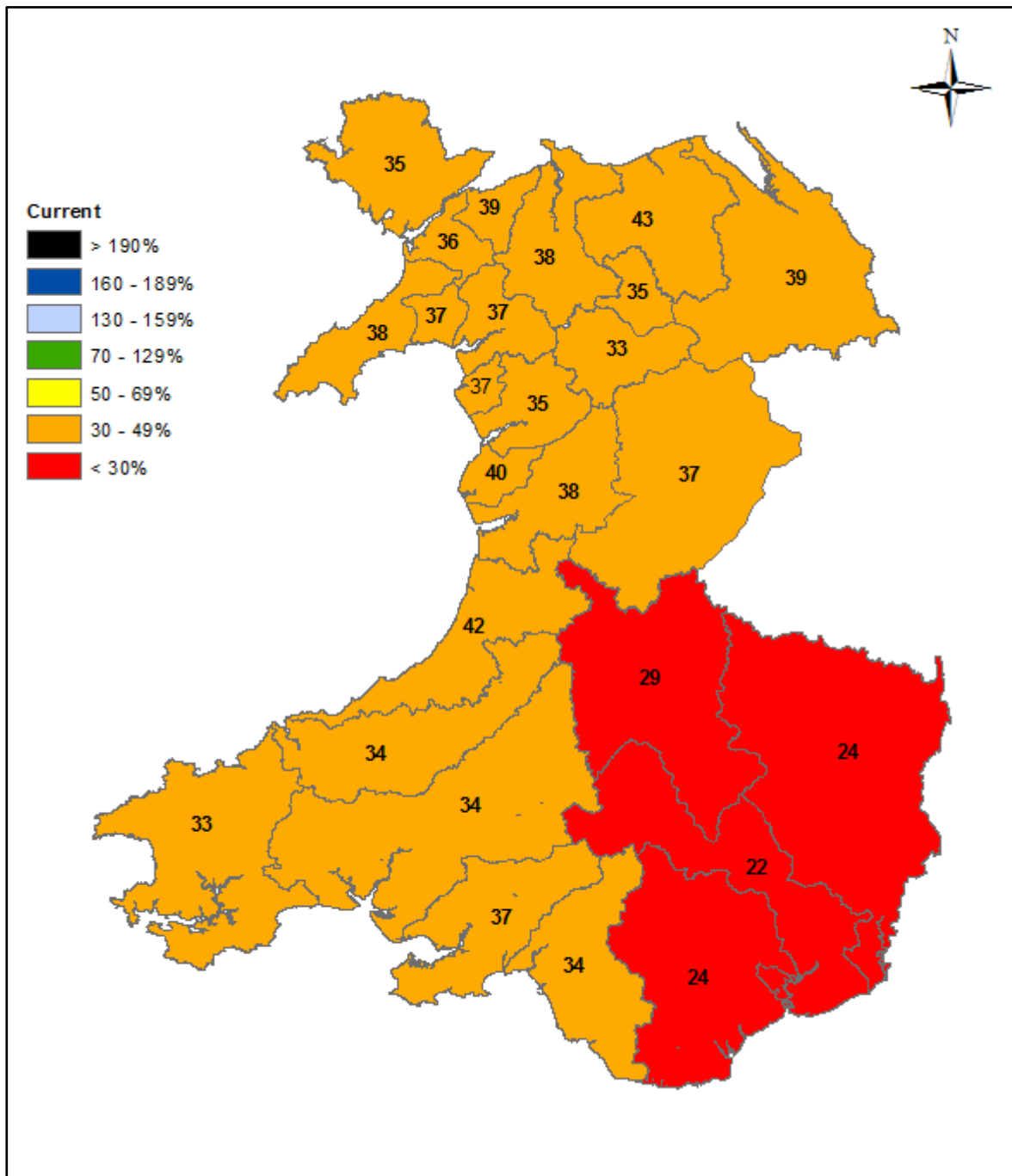
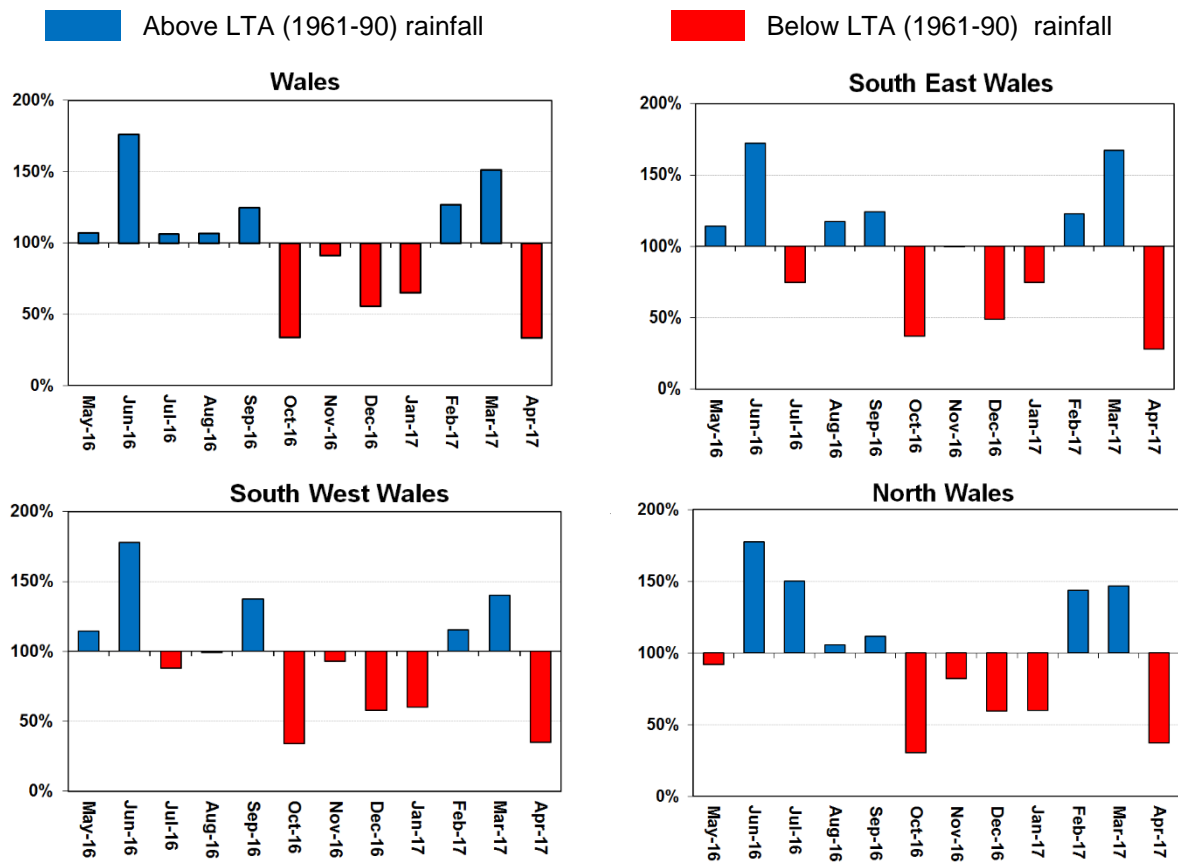


Figure 2: Calculated catchment average April rainfall totals as a percentage of the 1961-90 April long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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Rainfall Charts

Figure 3: Rainfall Charts: National and Areas

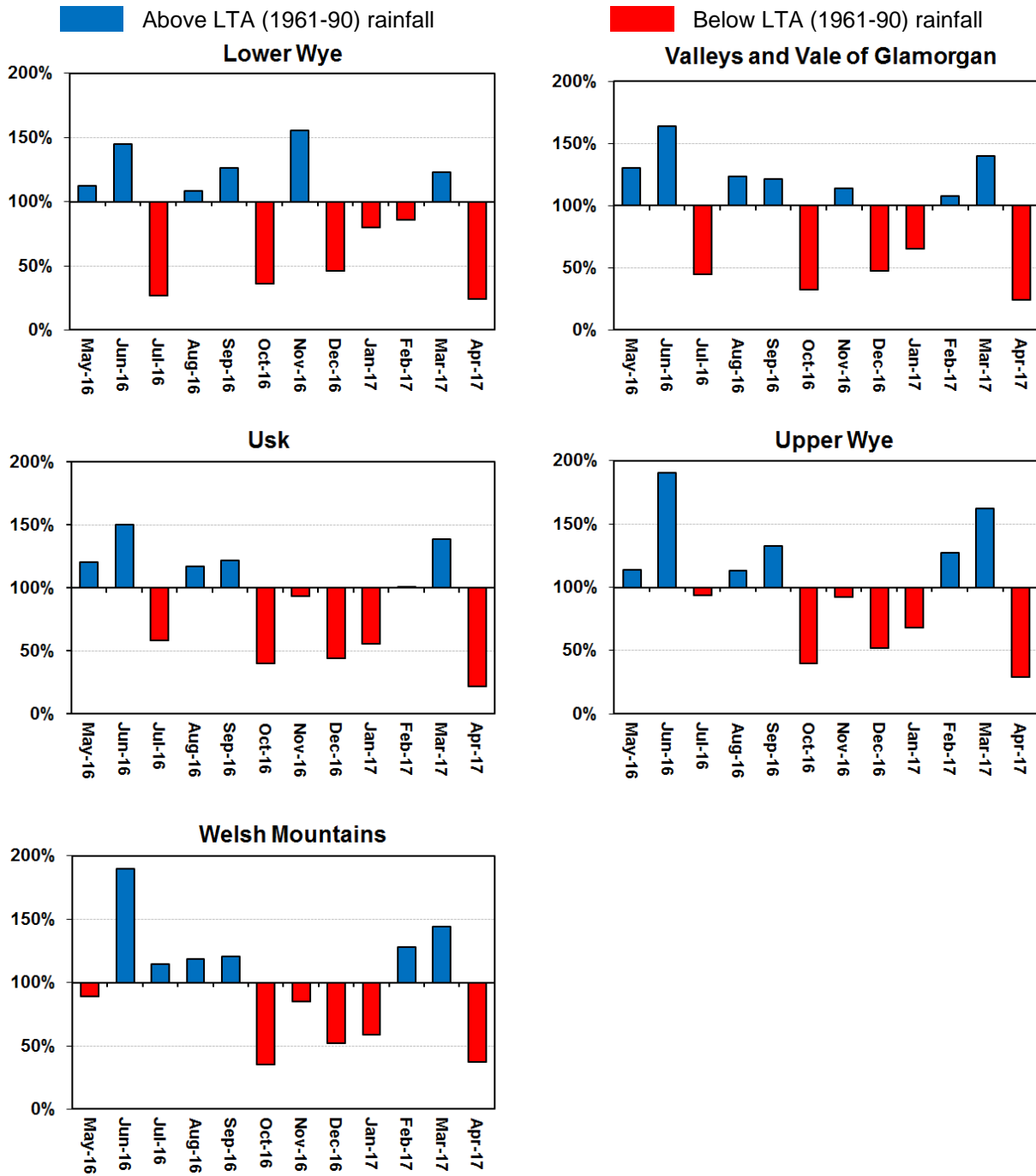


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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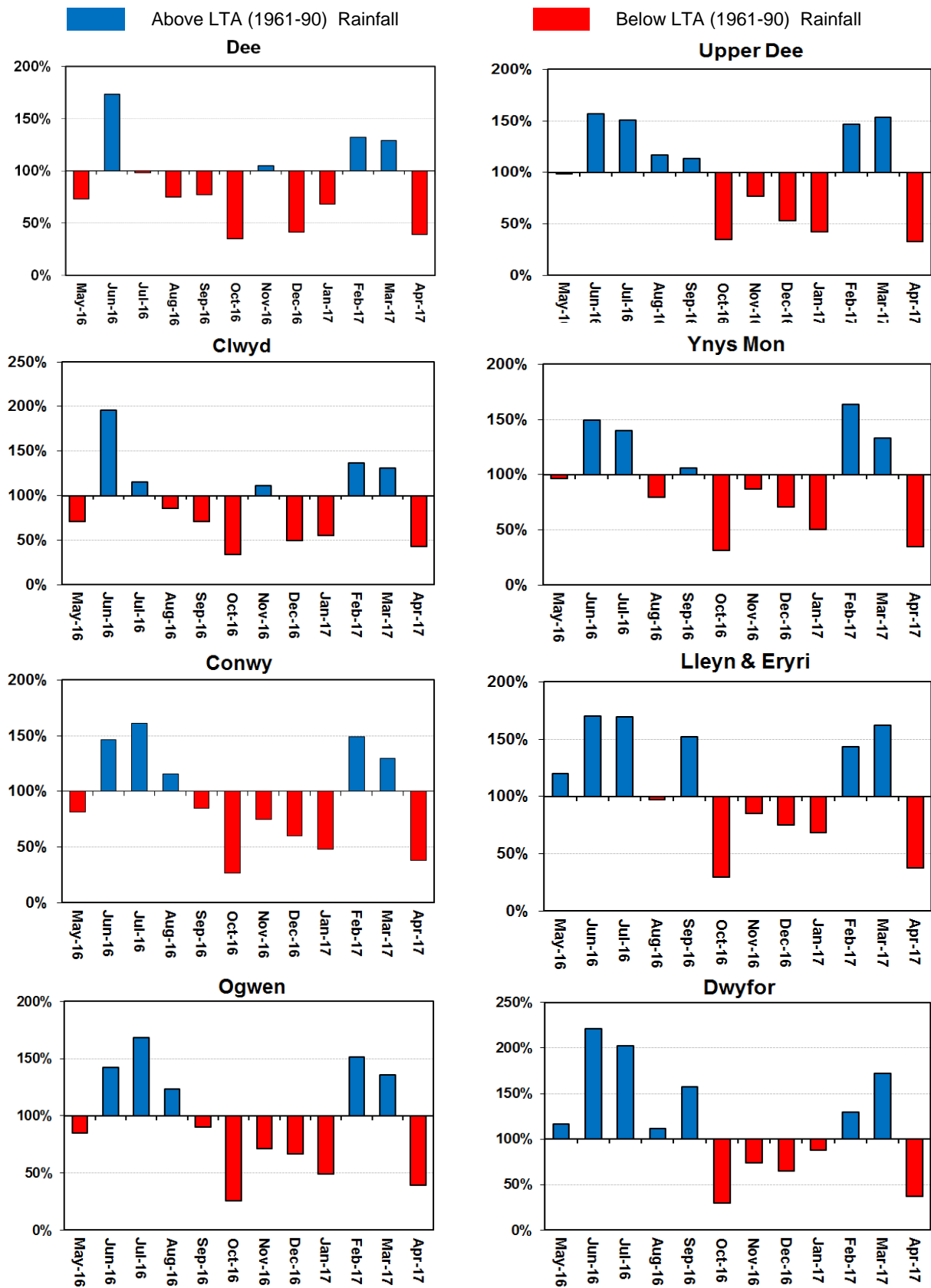
Figure 4: Rainfall Charts: South East Wales



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).

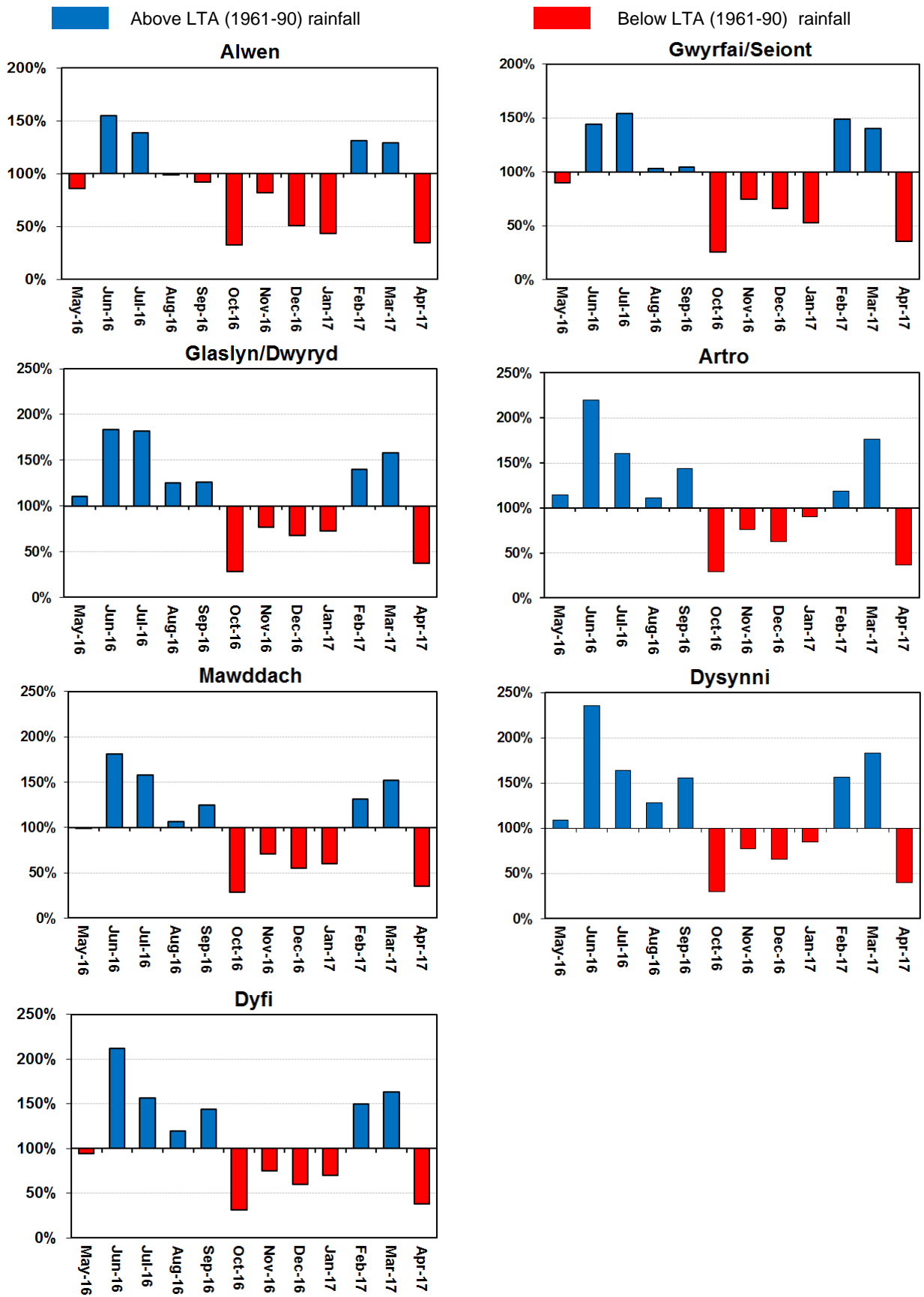
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Figure 5: Rainfall Charts: North Wales



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).

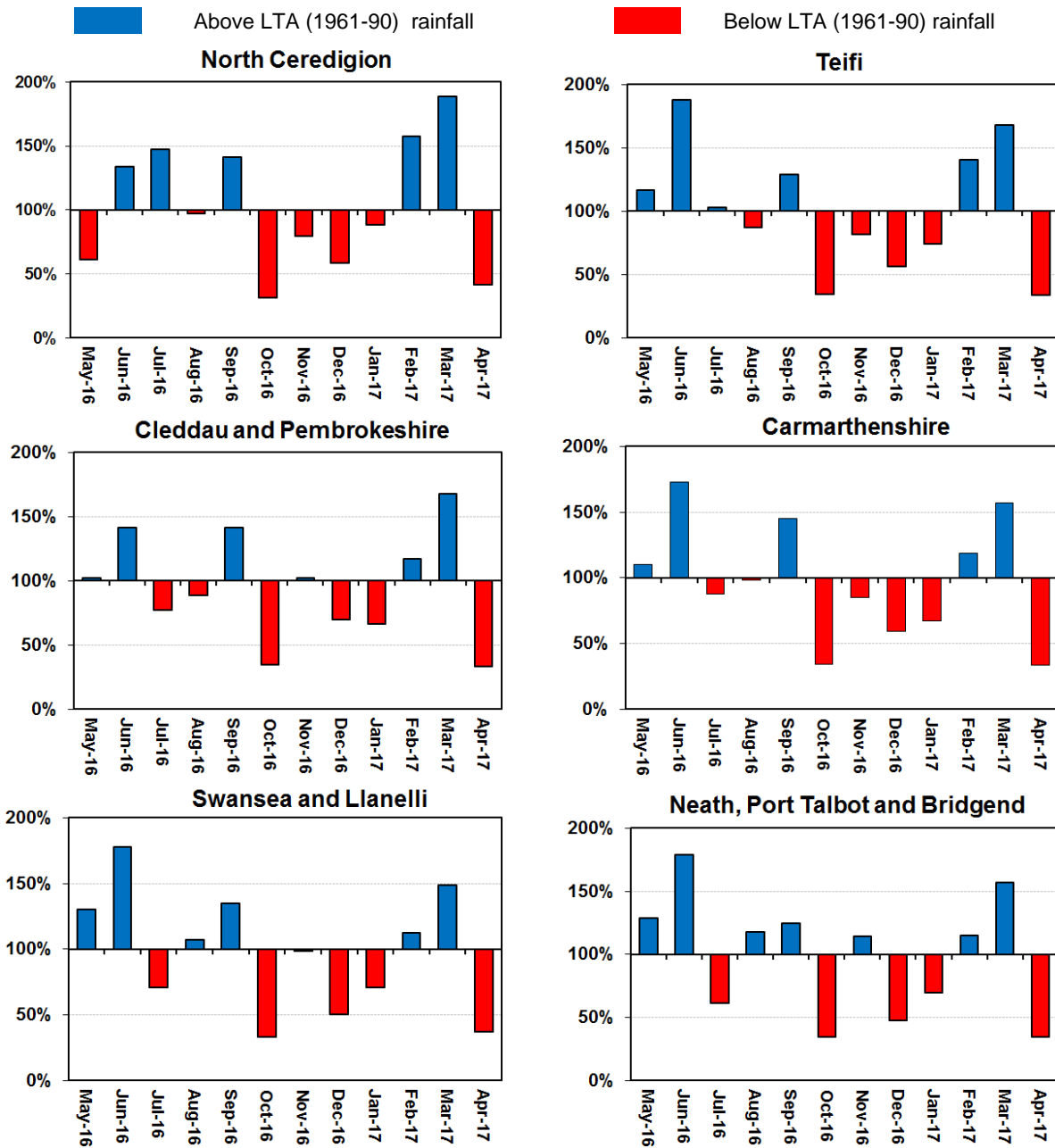
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Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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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)

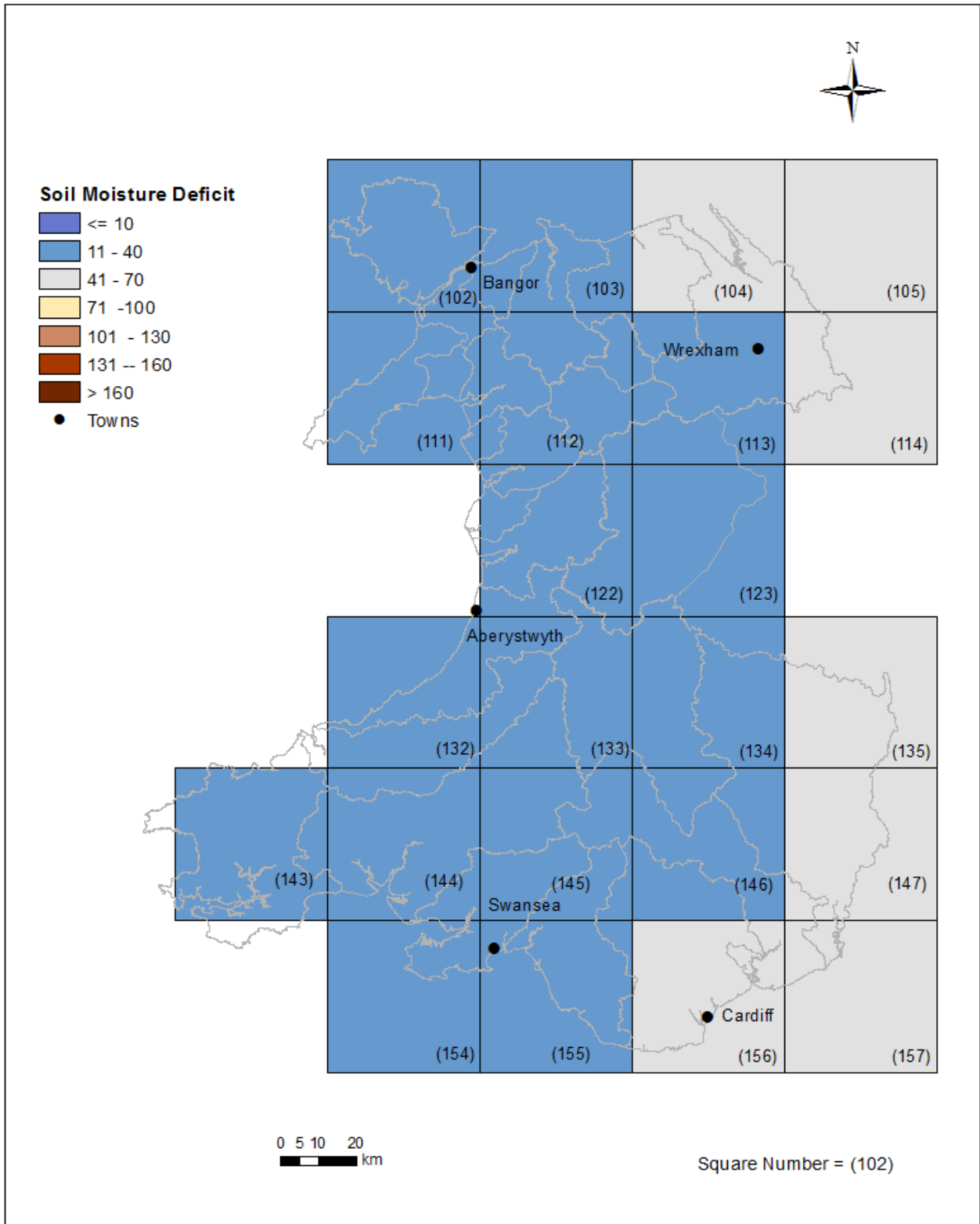


Figure 7: MORECS soil moisture deficits (mm) for April for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

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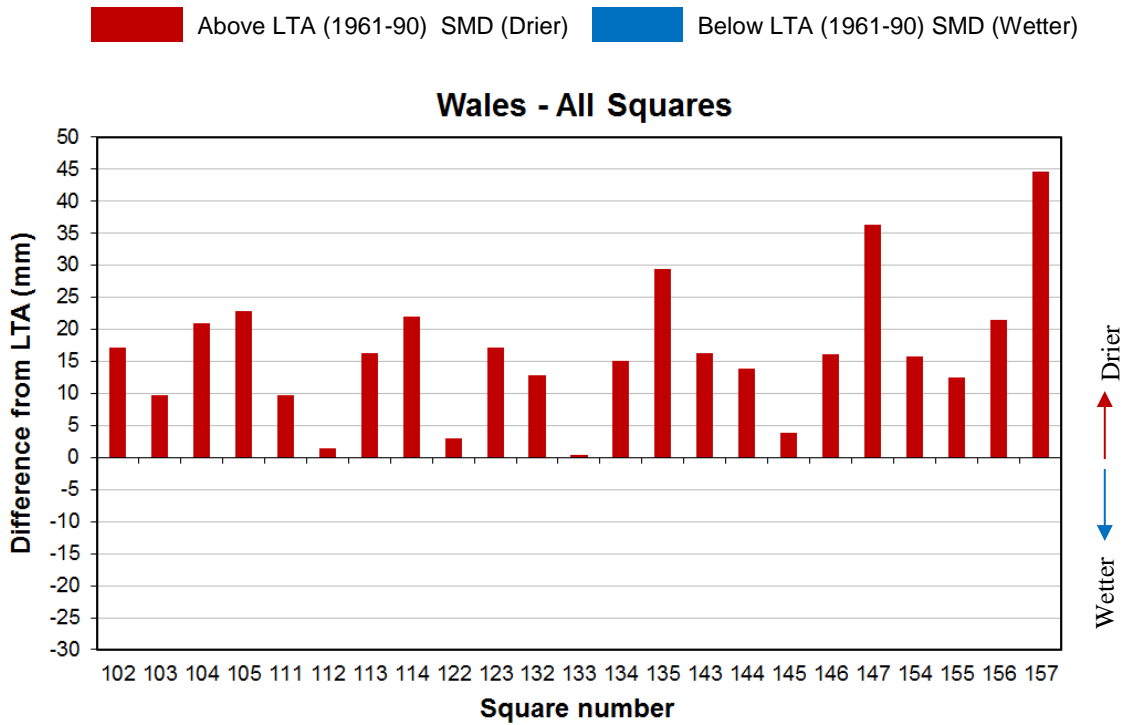


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for April for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

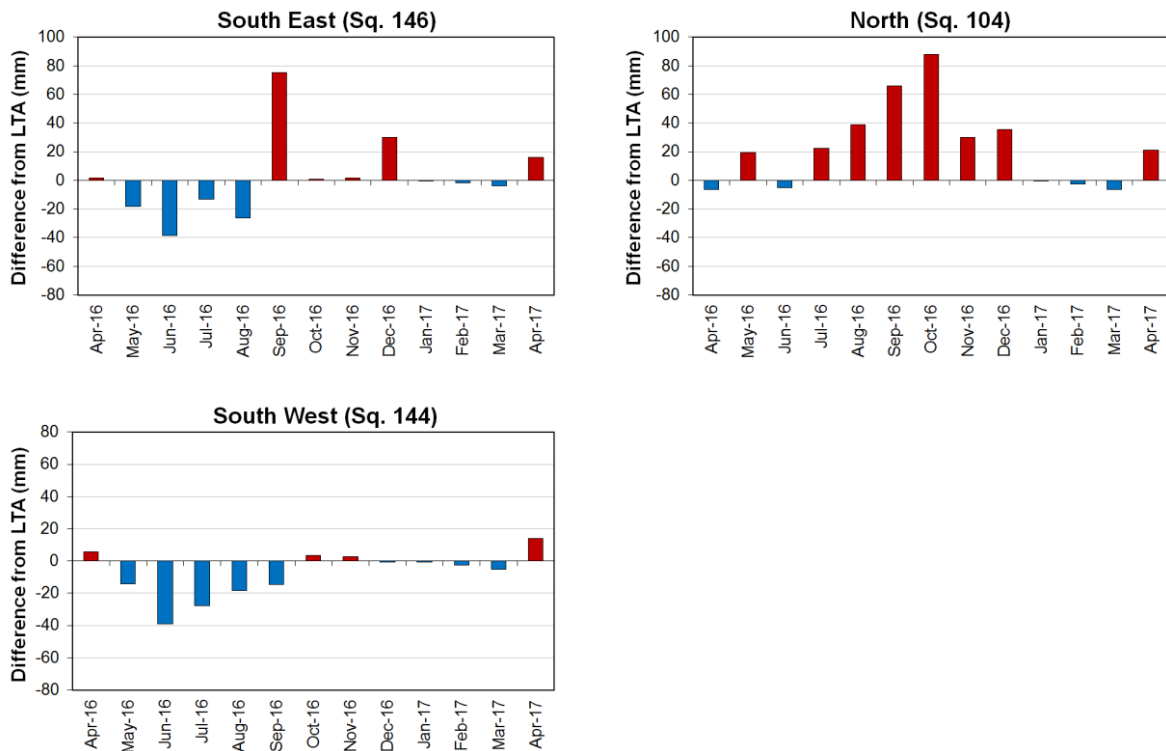


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales.)

River Flow

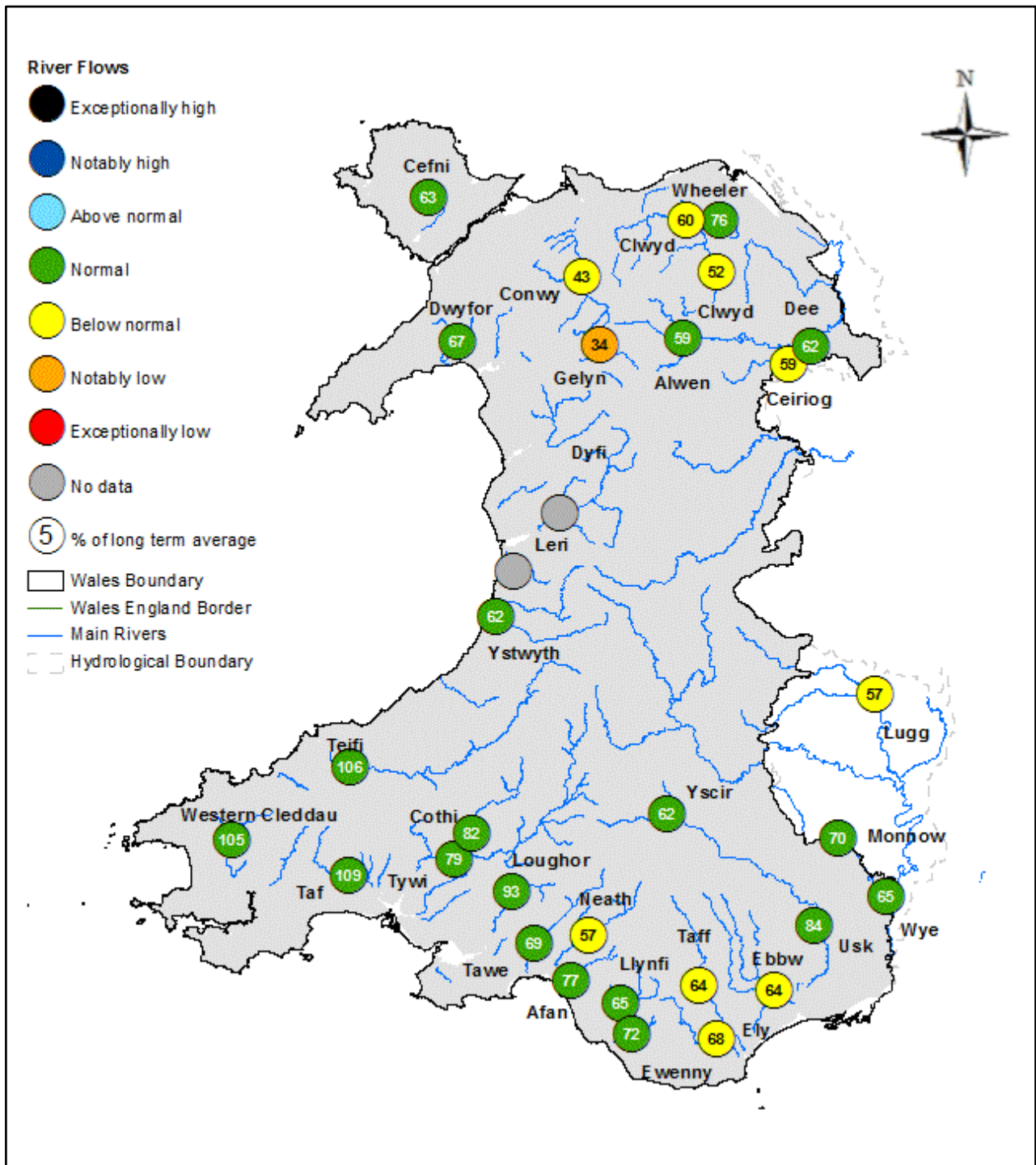


Figure 10: Monthly mean river flow for April, classed relative to analysis of historic April monthly means (Source: Natural Resources Wales).

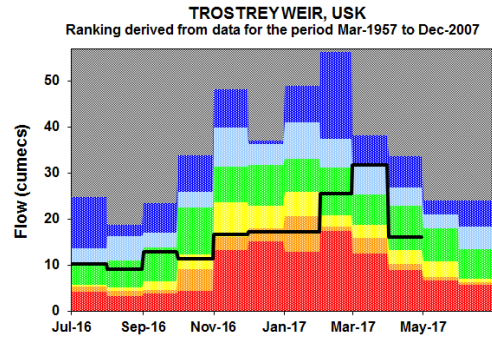
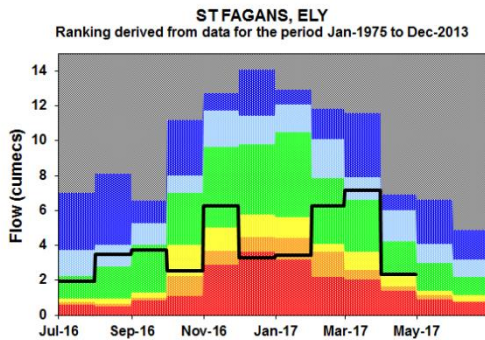
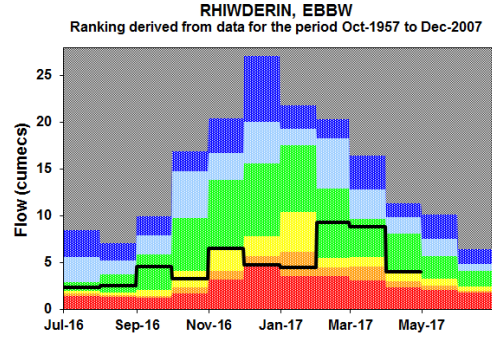
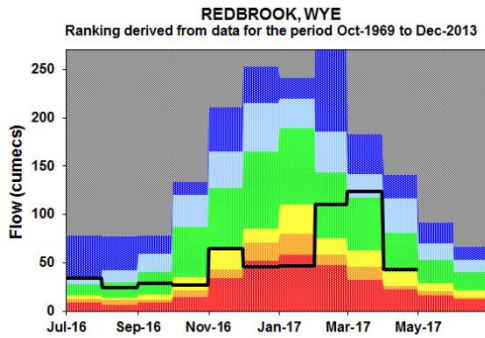
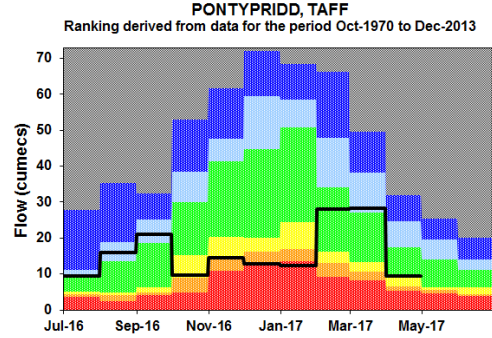
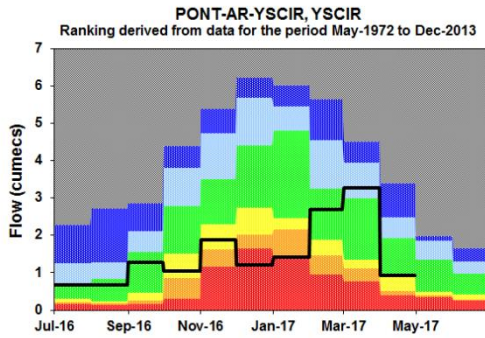
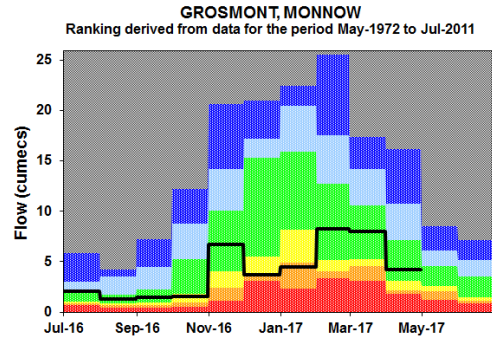
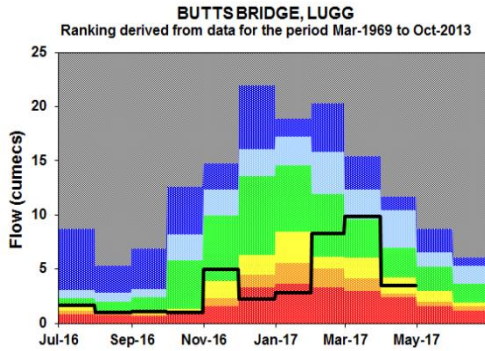
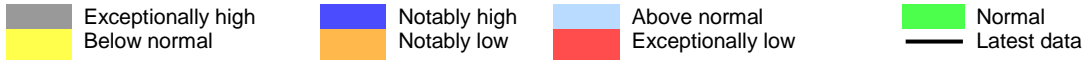
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SITE NAME	RIVER	April 2017			April 2016		April LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Monthly Min (m3/s)	Monthly Max (m3/s)
River Flow Sites : South East Area									
Butts Bridge	Lugg	Below normal	57%	3.51	74%	4.55	6.12	1.61	12.70
Grosmont	Monnow	Normal	70%	4.24	93%	5.61	6.02	1.57	17.10
Pont ar Yscir	Yscir	Normal	62%	0.93	75%	1.14	1.51	0.34	3.98
Pontypridd	Taff	Below normal	64%	9.49	84%	12.30	14.73	5.26	36.00
Redbrook	Wye	Normal	65%	43.30	88%	58.50	66.73	18.20	152.00
Rhiwderin	Ebbw	Below normal	64%	4.01	81%	6.68	6.22	1.87	12.70
St Fagans	Ely	Below normal	68%	2.36	79%	2.75	3.46	1.13	7.17
Trostrey Weir	Usk	Normal	84%	16.00	110%	22.10	19.10	7.84	37.32
River Flow Sites : North Area									
Bodfari	Wheeler	Normal	76%	0.65	125%	1.06	0.85	0.41	1.63
Bodffordd	Cefni	Normal	63%	0.17	156%	0.42	0.27	0.08	0.98
Brynkinalt Weir	Ceiriog	Below normal	59%	1.72	157%	4.58	2.91	0.69	6.34
Cwmlanerch	Conwy	Below normal	43%	5.79	125%	16.80	13.48	1.42	39.20
Cynefail	Gelyn	Notably low	34%	0.17	104%	0.52	0.50	0.09	1.47
Dol y Bont	Leri						1.20	0.27	2.53
Druid	Alwen	Normal	59%	2.39	142%	5.79	4.08	1.00	10.70
Dyfi bridge	Dyfi				136%	22.80	16.71	2.63	42.50
Garndolbenmaen	Dwyfor	Normal	67%	1.33	124%	2.46	1.99	0.43	4.74
Manley Hall	Dee	Normal	62%	16.10	140%	36.20	25.79	8.59	61.40
Pont y Cambwll	Clwyd	Below normal	60%	3.55	156%	9.23	5.91	1.83	14.70
Ruthin Weir	Clwyd	Below normal	52%	0.68	208%	2.73	1.31	0.37	2.79
River Flow Sites : South West Area									
Capel Dewi	Tywi	Normal	79%	22.90	95%	27.50	28.81	6.20	64.80
Clog y Fran	Taf	Normal	109%	6.08	122%	6.79	5.58	1.74	12.10
Coytrahen	Llynfi	Normal	65%	1.08	92%	1.52	1.66	0.39	3.84
Felin Mynachdy	Cothi	Normal	82%	6.97	117%	9.95	8.52	1.44	20.40
Glanteifi	Teifi	Normal	106%	23.30	120%	26.40	21.95	5.82	48.20
Keepers Lodge	Ewenny	Normal	72%	1.09	81%	1.22	1.51	0.65	3.92
Marcroft	Afan	Normal	77%	2.80	94%	3.40	3.63	1.02	7.57
Pont Llolwyn	Ystwyth	Normal	62%	2.64	95%	4.06	4.26	0.96	10.10
Treffgarne *	Western Cleddau	Normal	105%	3.18	110%	3.33	4.48	1.91	8.64
Resolven	Neath	Below normal	57%	3.86	75%	5.08	6.77	2.20	14.60
Tir-y-Dail	Loughor	Normal	93%	1.43	120%	1.85	1.54	0.54	3.00
Ynystanglws	Tawe	Normal	69%	5.94	86%	7.38	8.61	2.15	18.20

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

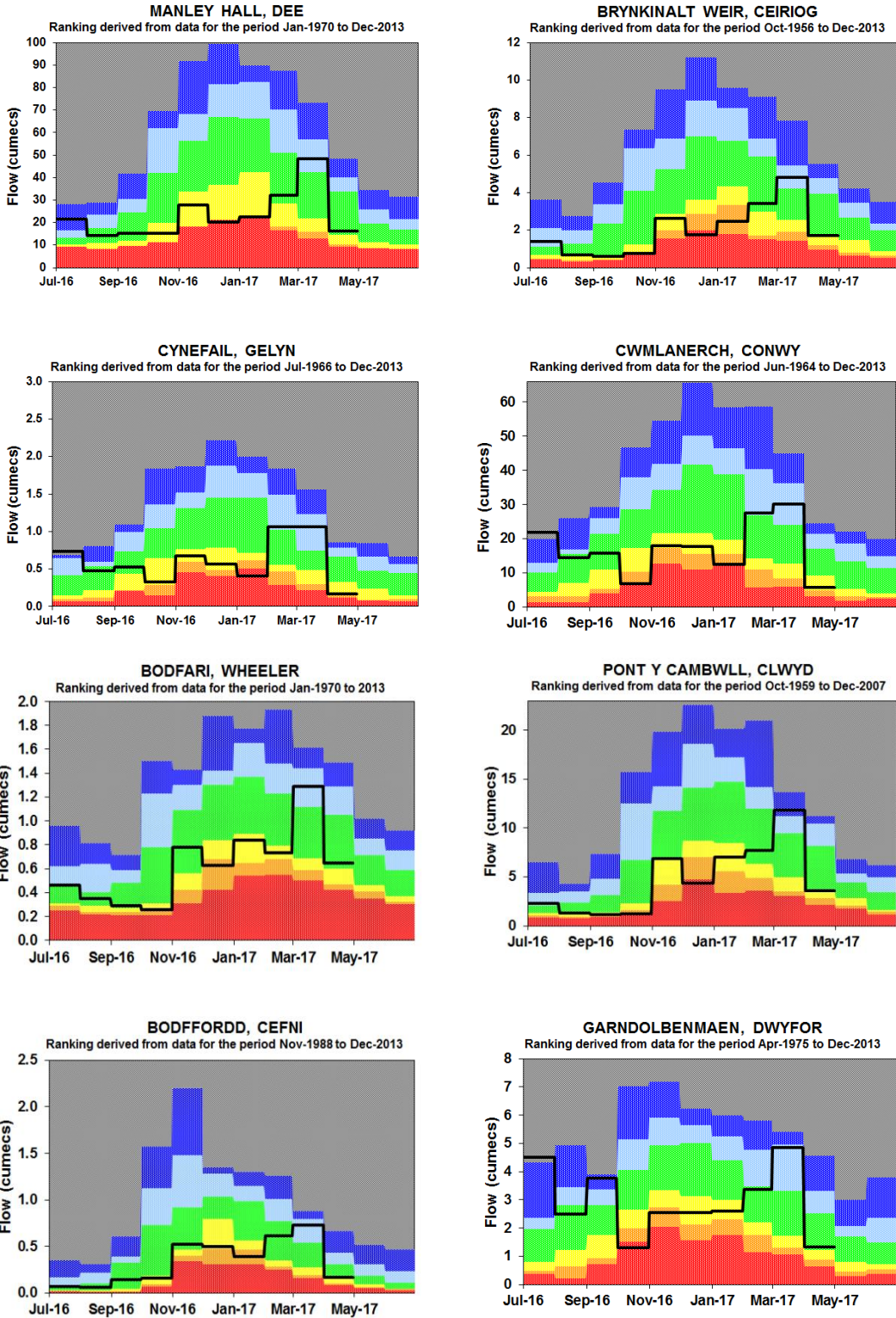
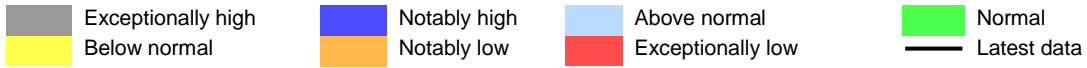
Figure 12: River Flow Charts: South East Wales



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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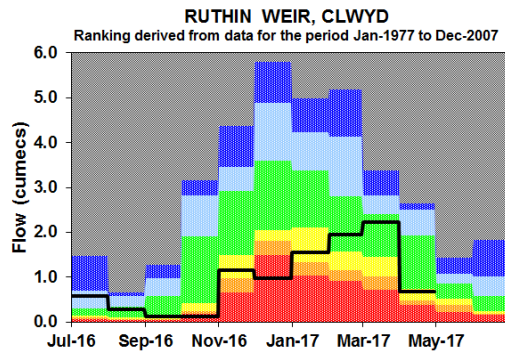
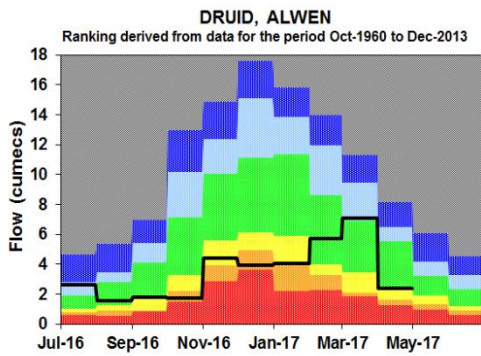
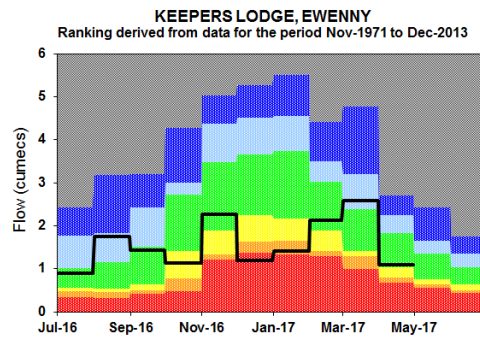
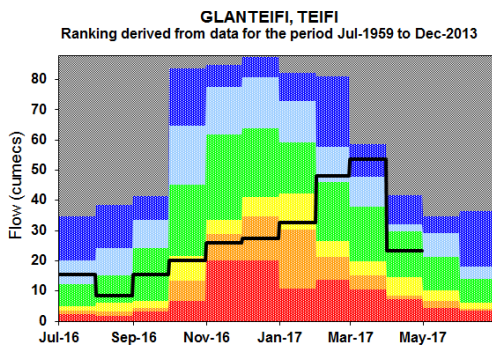
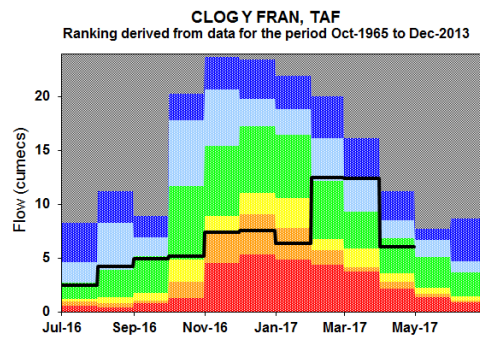
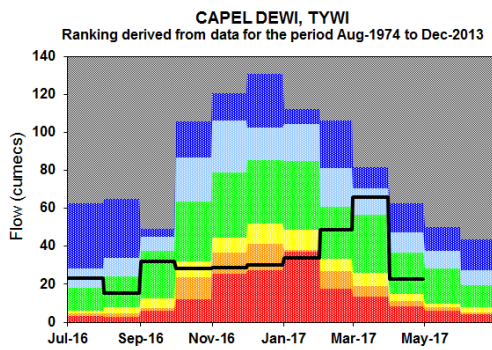
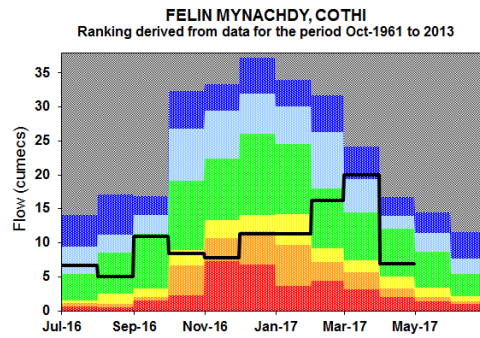
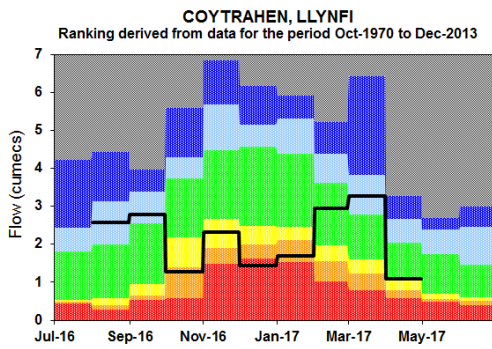
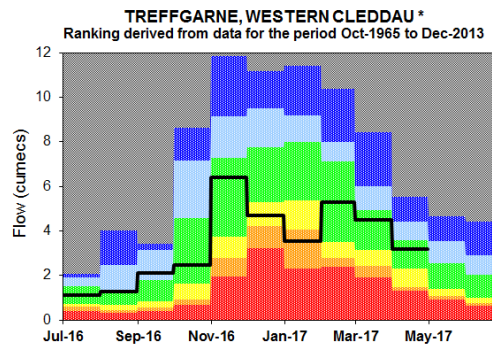
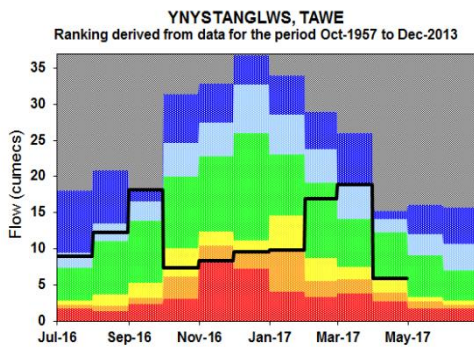
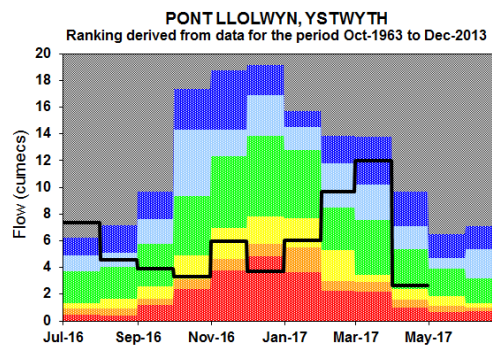
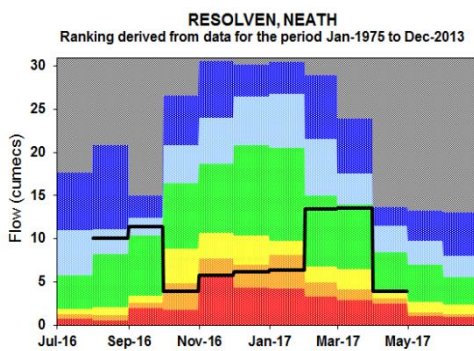
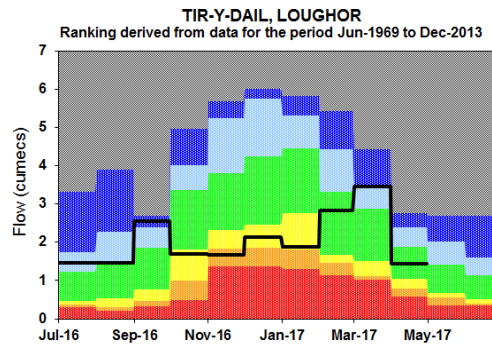
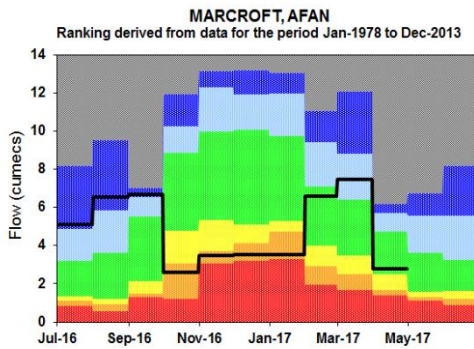
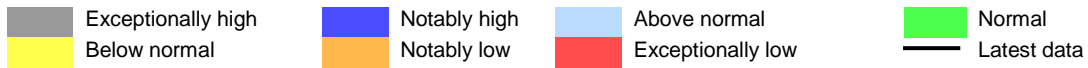


Figure 14: River Flow Charts: South West Wales



(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

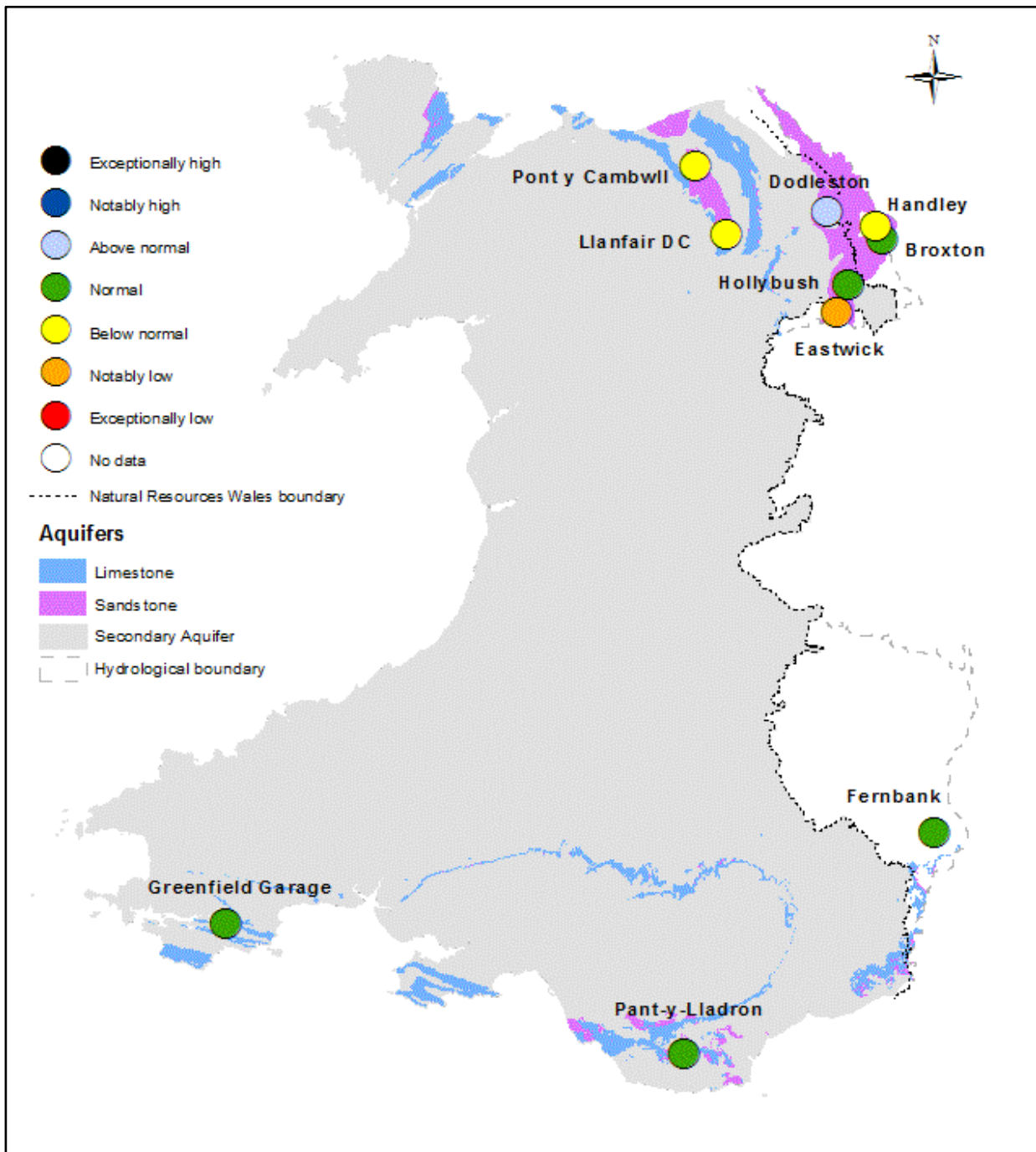
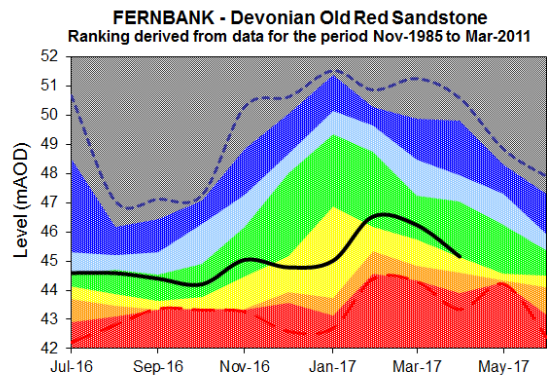
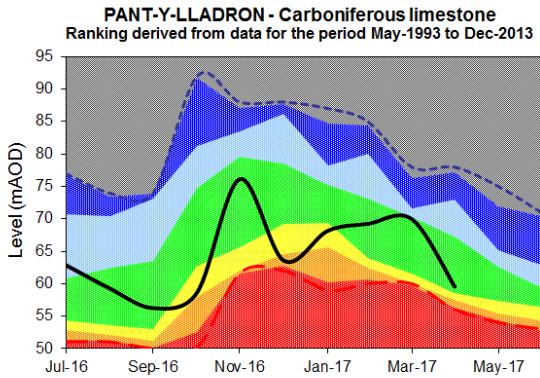
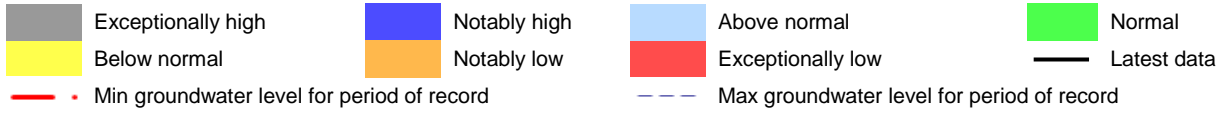


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic April groundwater levels (Source: Natural Resources Wales and Environment Agency).

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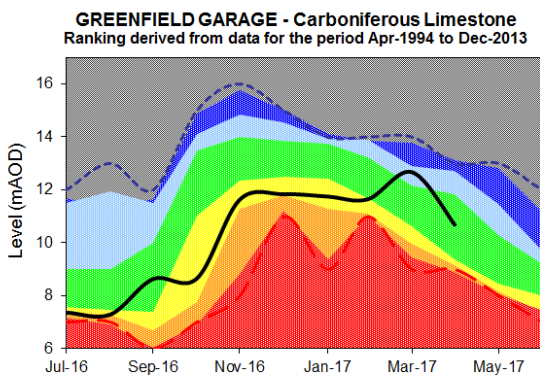
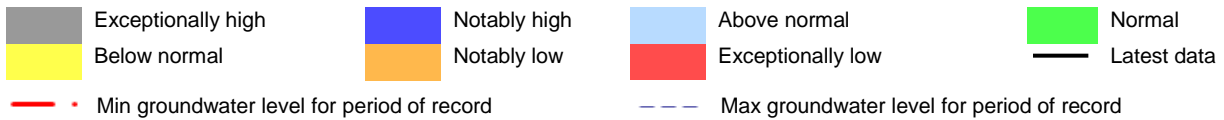
Groundwater charts

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).

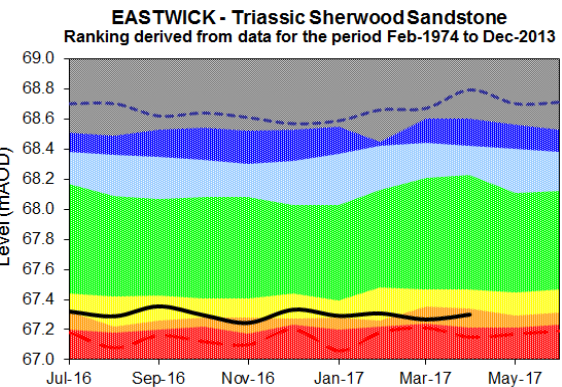
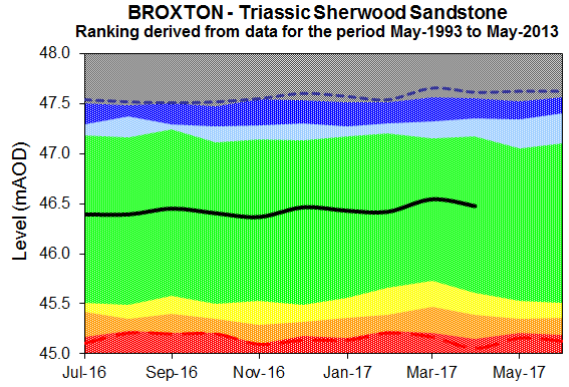
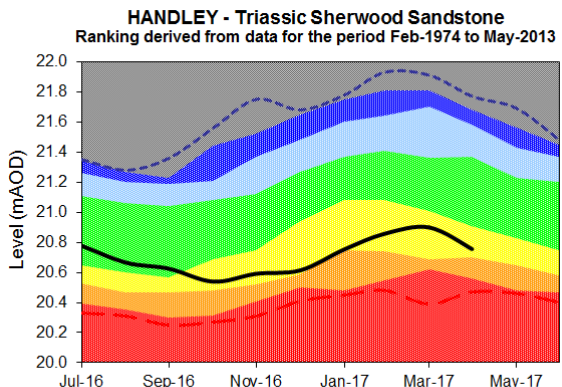
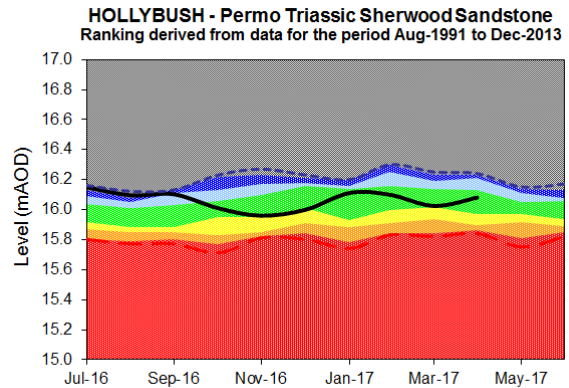
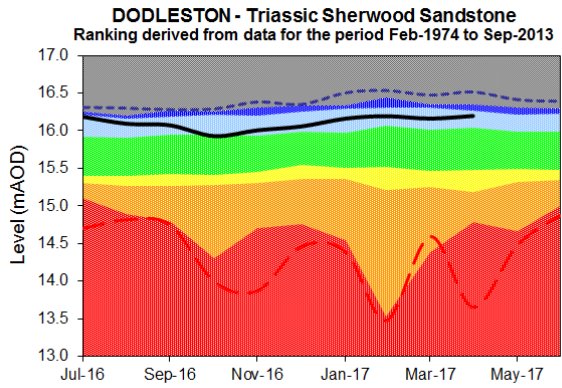
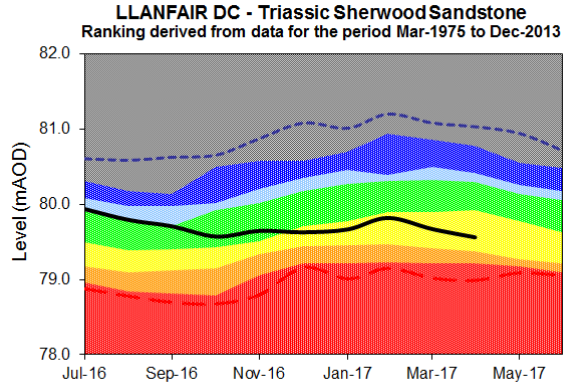
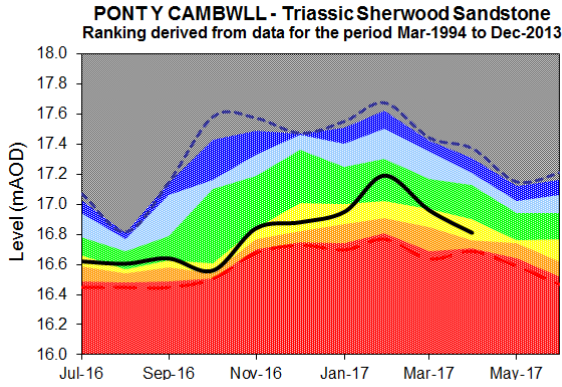
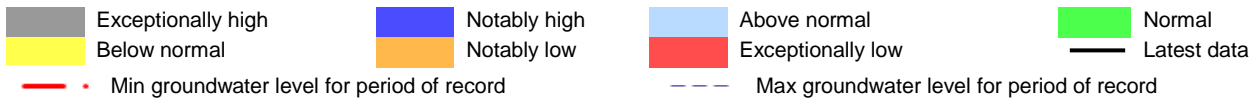
Figure 17: Groundwater level charts: South West Wales



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

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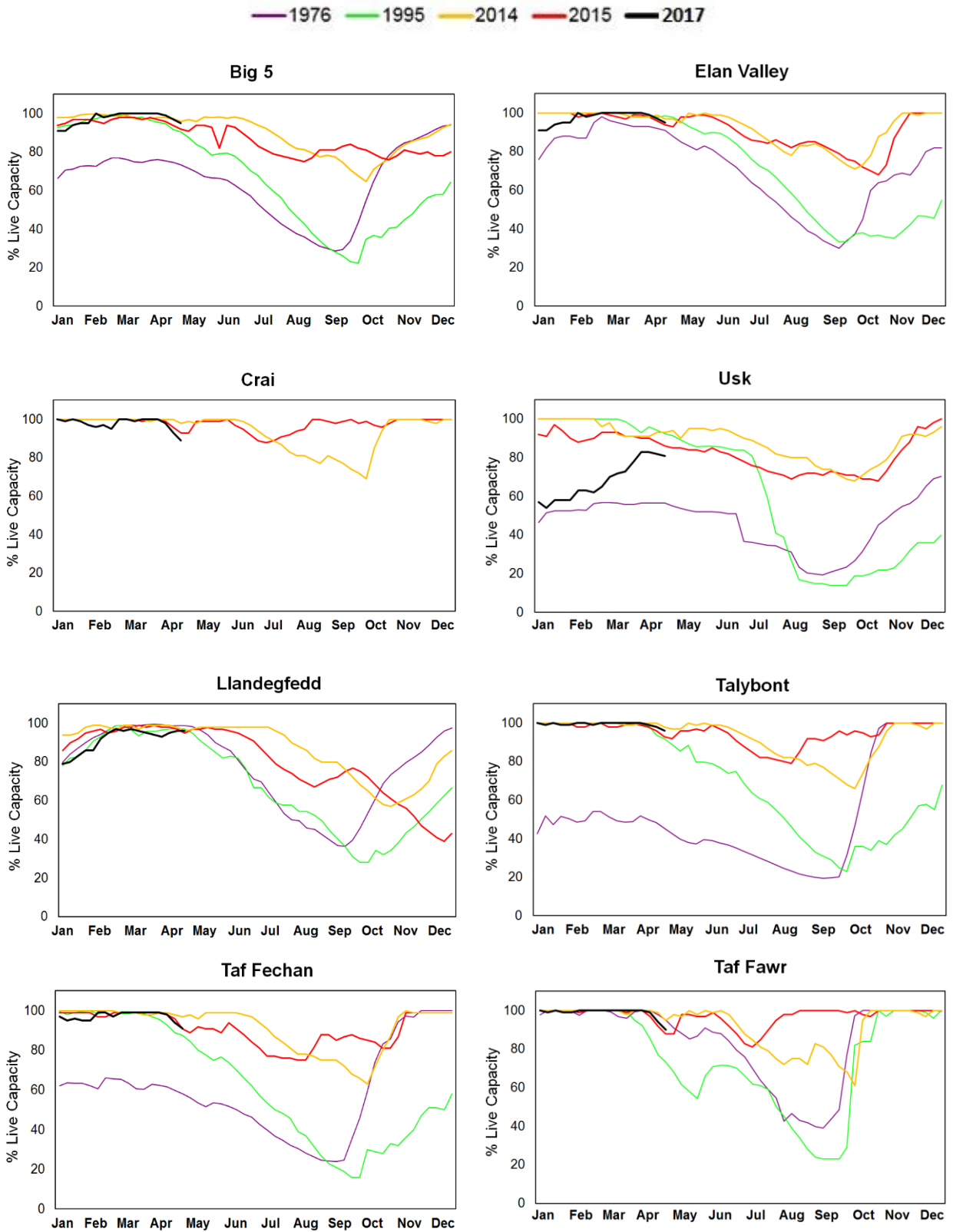
Figure 18: Groundwater level charts: North Wales



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

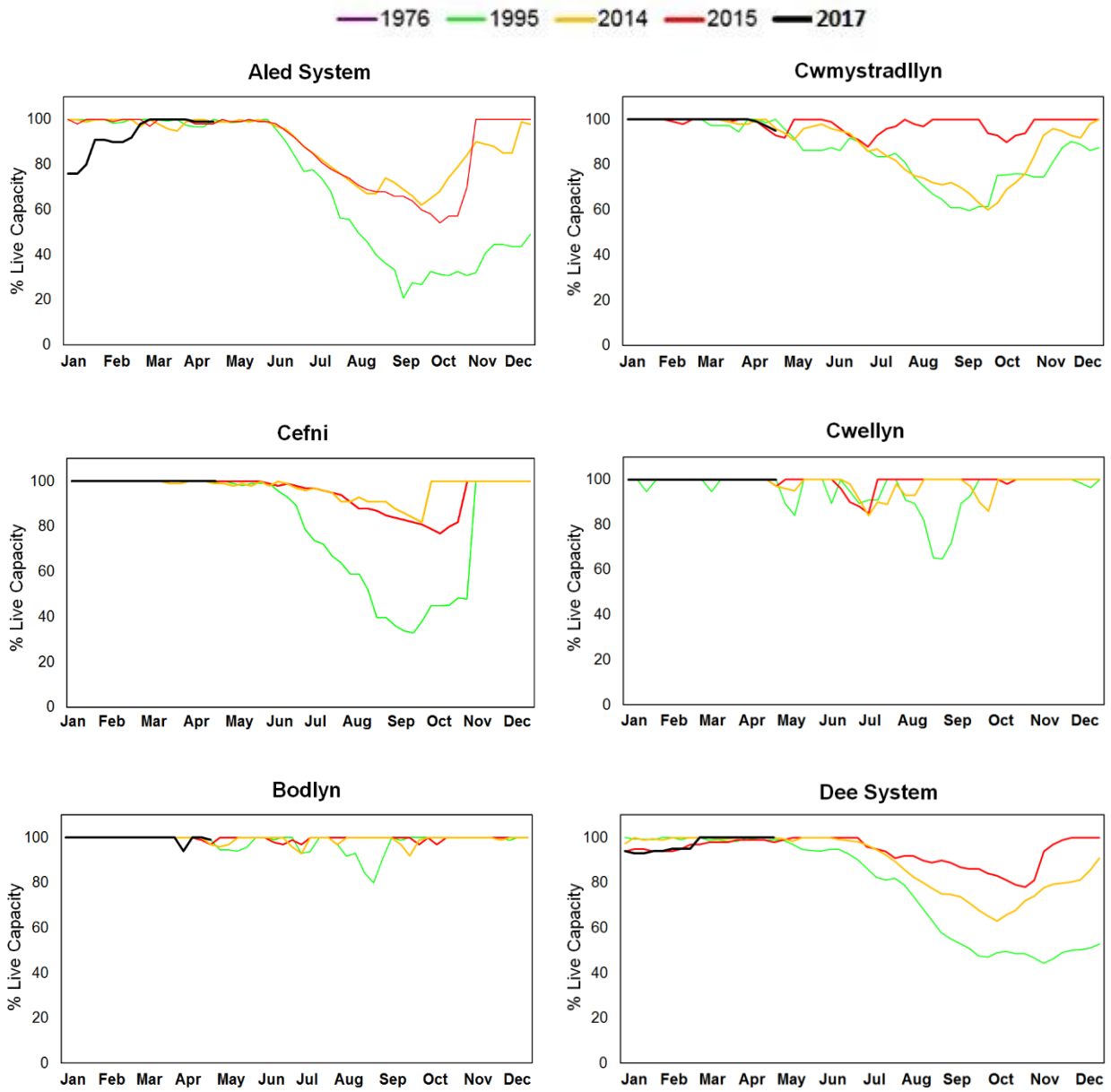


Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water)

(Please note that the reservoir Usk stock (65%) were low at the end of February due to maintenance work being carried out on this reservoir although its stock has increased compared with the previous months.)

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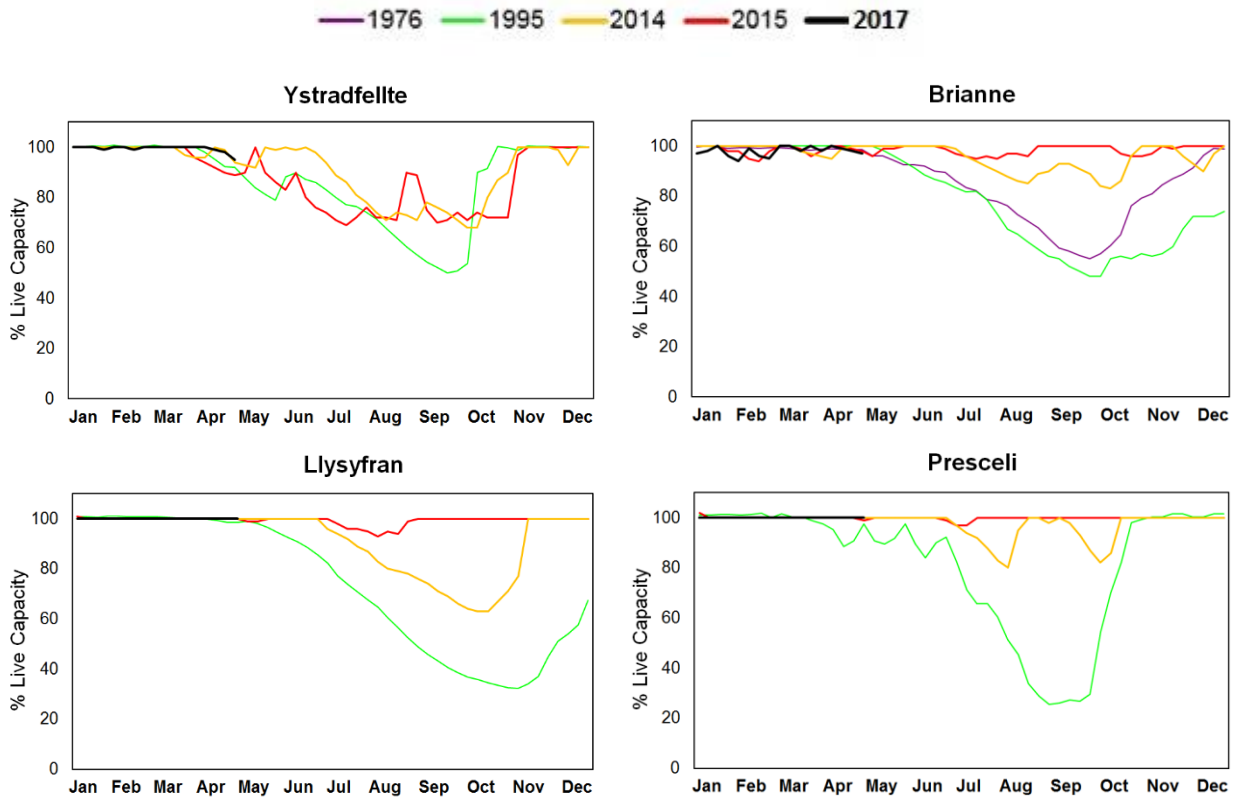
Figure 20: Reservoirs charts: North Wales



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 ($m^3 s^{-1}$)
mAOD	Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).