

Natural Resources Wales

- The monthly rainfall total for Wales during September was 156% of the Long Term Average (LTA, 1961-90). South East, South West and North Wales received 132%, 167% and 166% of the LTA, respectively.
- At the end of September, soil moisture deficit (SMD) values across Wales were from 0 to 114.8mm for all MORECS squares. Soil in 19 squares (out of 23) was wetter than the LTA while soil in the rest of the squares (4 out of 23) were drier than the LTA for September.
- For river flows in Wales, 9 out of 30 indicator sites (which had flow data available) were classed as *Normal* and 6 were classed as *Above normal*. 6 sites were classed as *Notably high* and 8 sites were *Exceptionally high*. The remaining site was *Below normal* for September.
- The overall cumulative reservoir storage across the indicator sites was greater than 80% except 5 reservoirs (Elan Valley, Usk, Ystradfellte, Llandegfedd and the Big Five) at the end of September and all reservoirs were within normal operating ranges.

Rainfall*

The monthly rainfall total for Wales was 156% of the LTA for September. The percentage of rainfall recorded in catchments compared with the LTA across Wales was between 92% (Lower Wye) and 200% (Dysynni). The rainfall total for Wales was 64.9mm more than the September LTA. For South East, South West and North Wales the rainfall totals were 132%, 167% and 166% 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 0 and 114.8mm. 19 squares were wetter than the long term average while the remaining 4 squares were drier than the LTA for September.

SMD Map [National](#)

SMD Charts [Compare to LTA](#)

All data are provisional and August be subject to revision.

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River Flows

River flows were between *Below normal* and *Exceptionally high* for all the indicator sites across Wales. 9 out of 30 indicator sites (which had flow data available) were classed as *Normal* and 6 were classed as *Above normal*. 6 sites were classed as *Notably high* and 8 sites were *Exceptionally high*. The remaining site was classed as *Below normal* for September.

South East: Flows in the area ranged from 41% (River Lugg at Butts Bridge) to 144% (River Usk at Trostrey Weir) of the September LTA values.

South West: The river flows within this area ranged from 92% (River Ewenny at Keepers Lodge) to 311% (River Taf at Clog y Fran) of the September LTA values.

North: Flows in the area ranged from 133% (River Wheeler at Bodfari) to 361% (River Clwyd at Ruthin Weir) 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 *Exceptionally low* (Eastwick) to *Above normal* (Pant-y-Lladron, Fernbank and Dodleston). 3 sites were classed as *Normal* (Greenfield Garage, Hollybush and Broxton) and 3 sites were classed as *Notably low* (Llanfair, Handley and Pont y Cambwll).

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 (13 out of 18) were greater than 80% full and the remaining five reservoirs (Usk, Elan Valley, Llandegfedd, Ystradfellte and Big 5) were 66%, 71%, 60%, 69% and 79% full respectively. All of the reservoirs were within normal operation 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

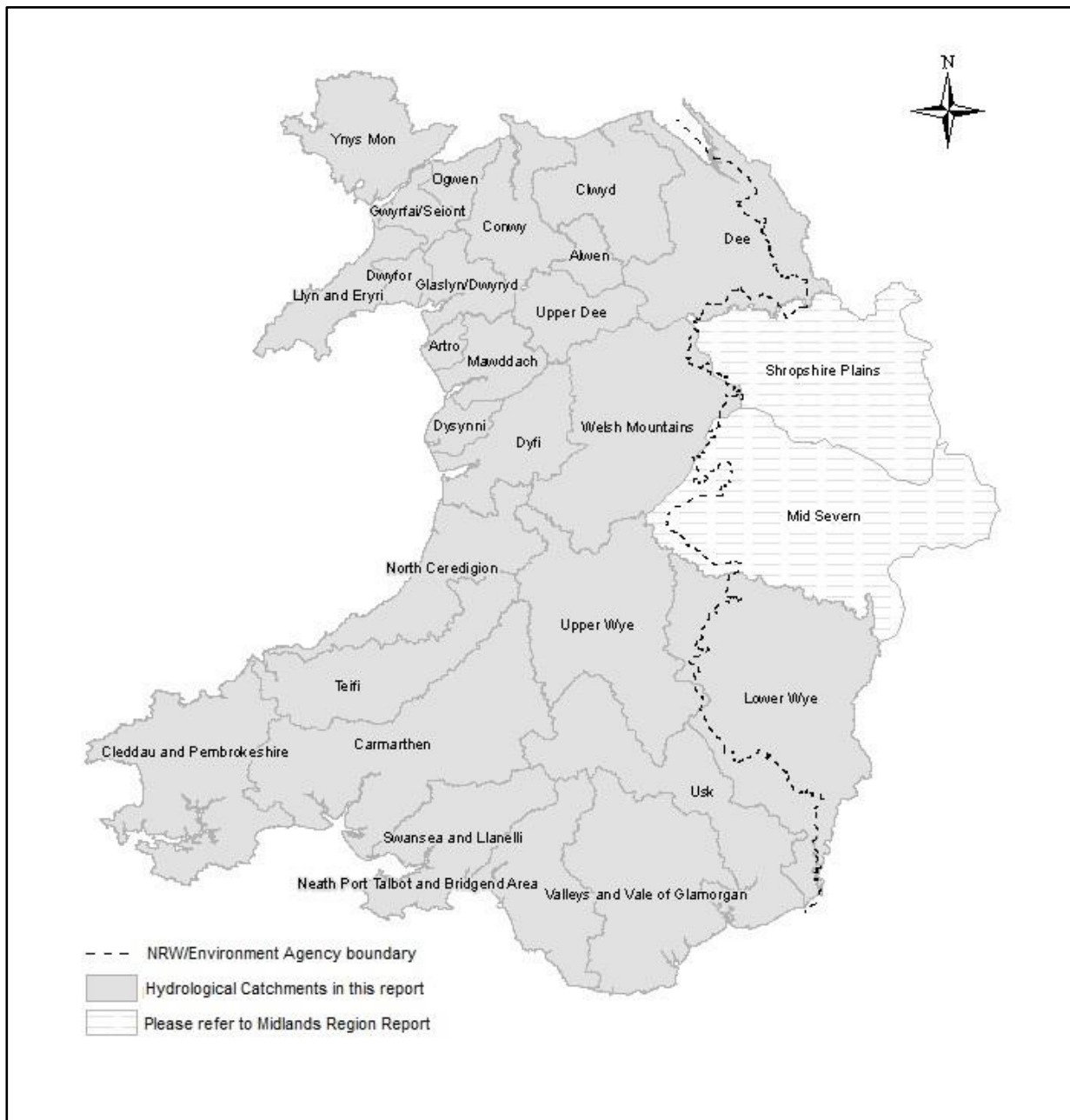


Figure 1: The Natural Resources Wales Water Situation Report features sites in the catchments shown. Parts of the Shropshire Plains and Mid Severn catchments are within Wales. For full information on these catchments, please see the Environment Agency Midlands Water Situation Report.

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

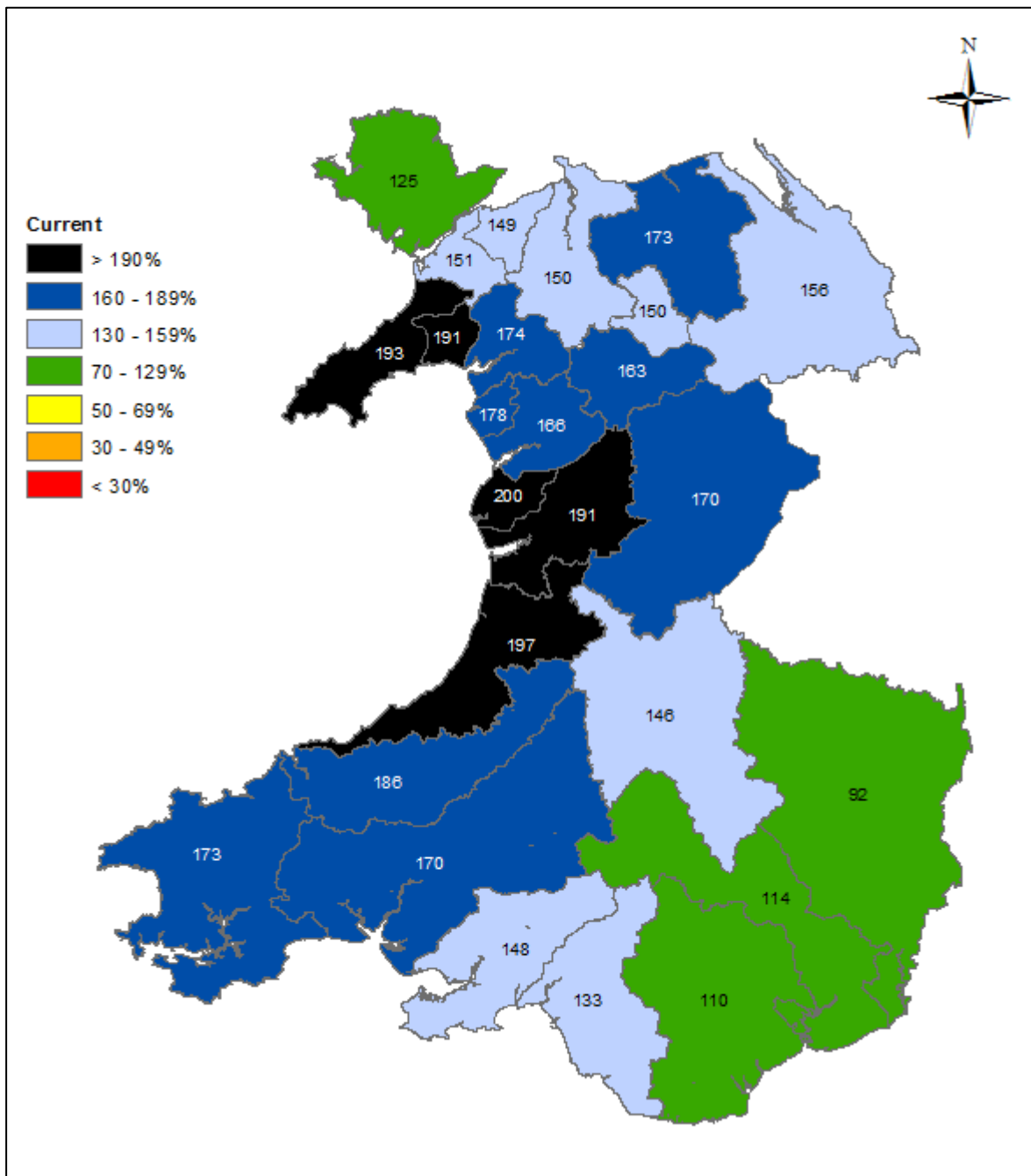
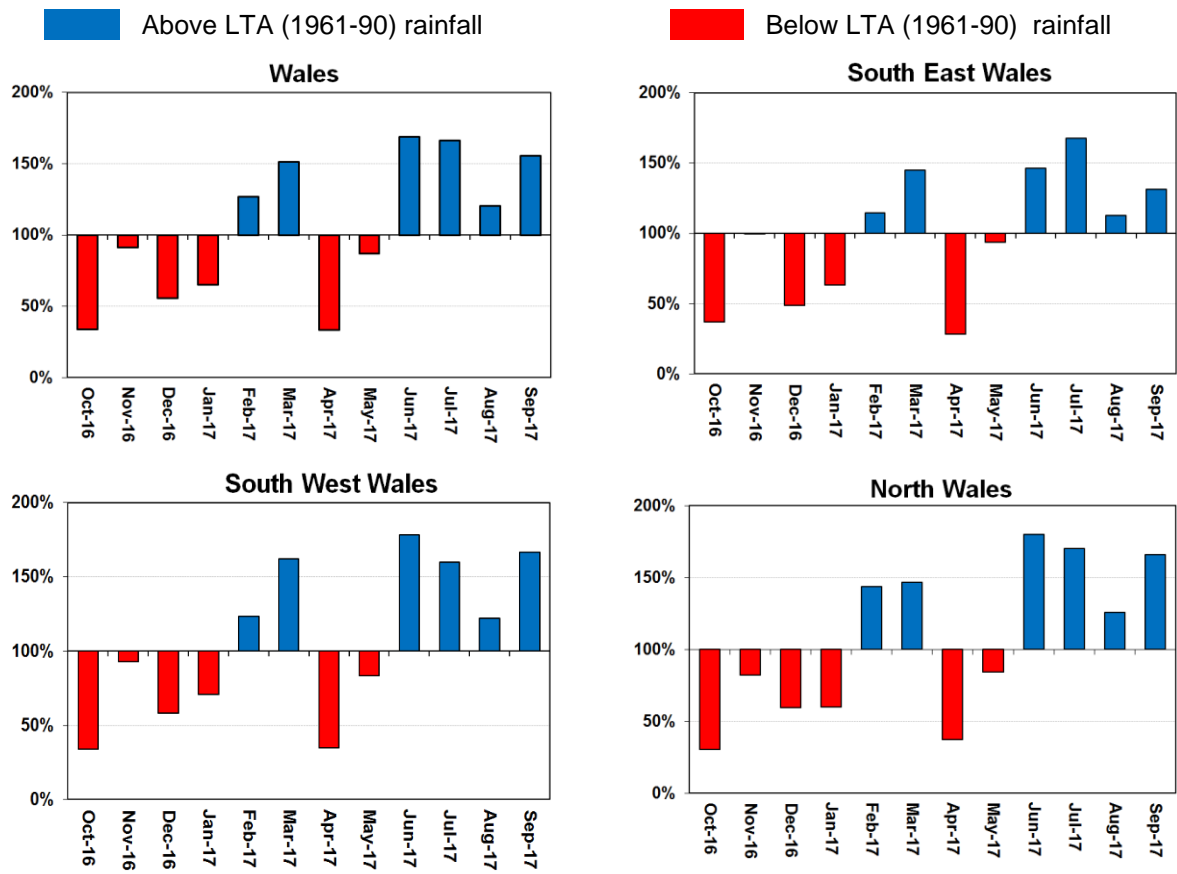


Figure 2: Calculated catchment average September rainfall totals as a percentage of the 1961-90 September long term average for Natural Resources Wales catchments, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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Rainfall Charts

Figure 3: Rainfall Charts: National and Areas

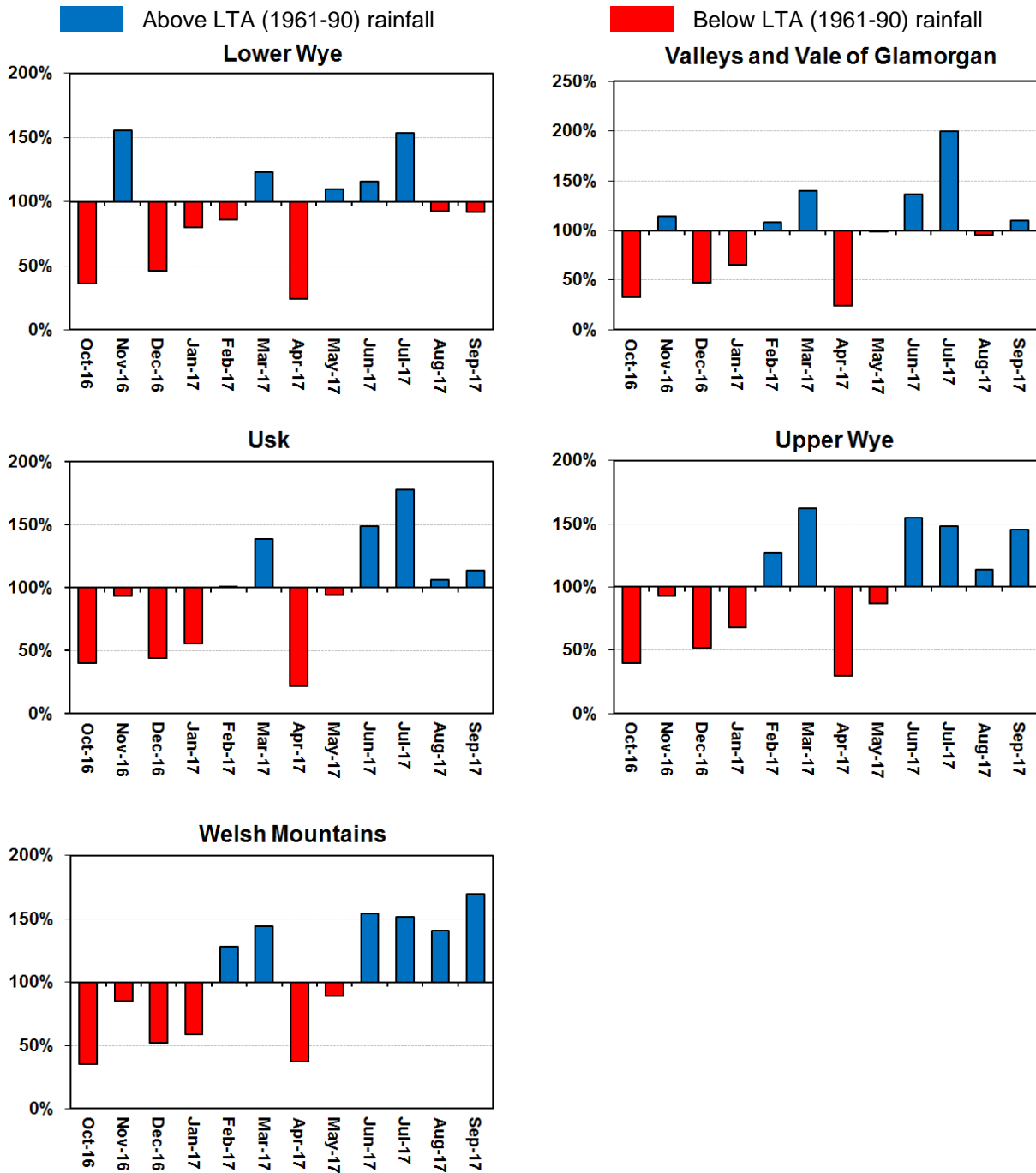


Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for Natural Resources Wales and Areas, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

All data are provisional and Jul be subject to revision.

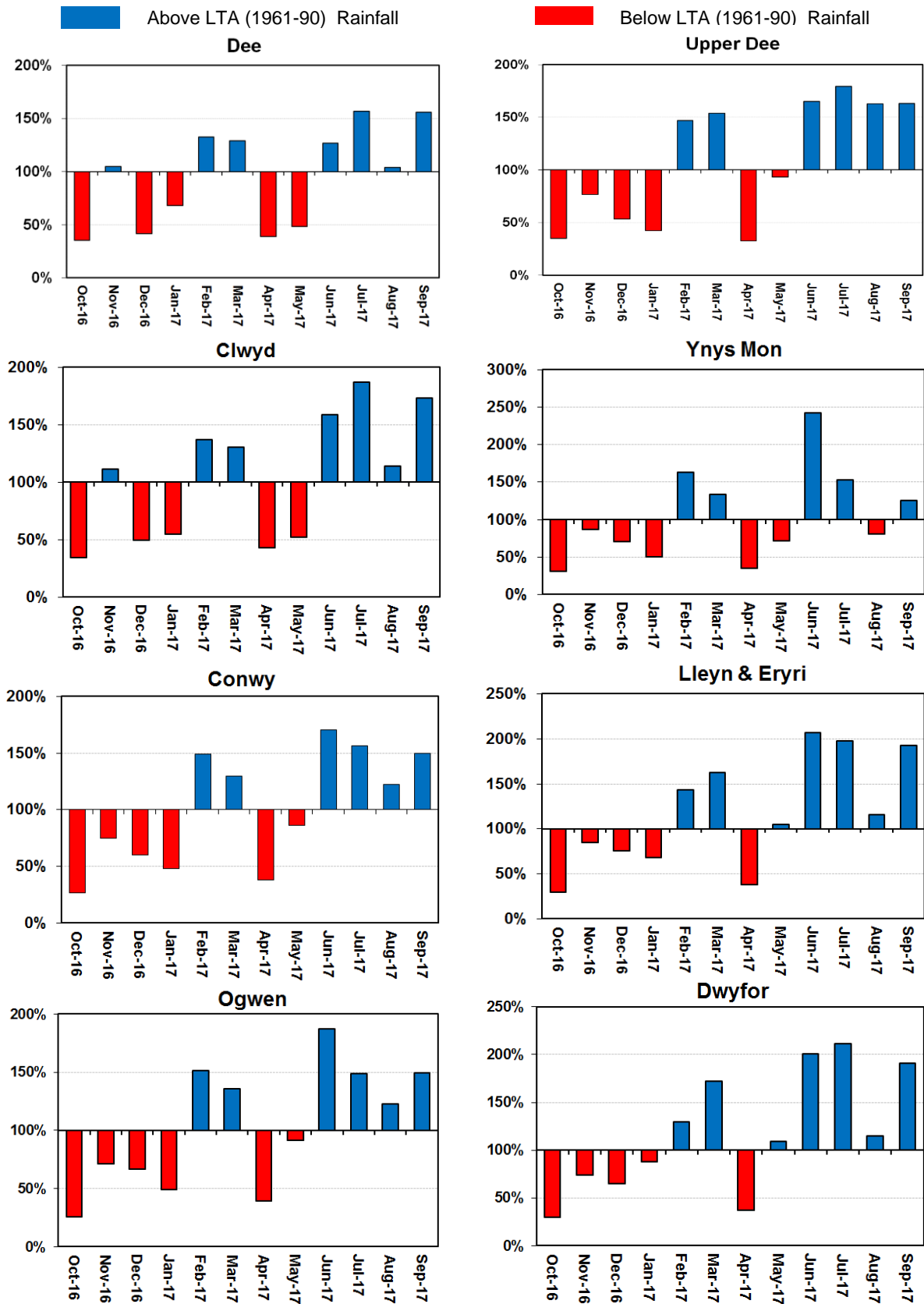
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Figure 4: Rainfall Charts: South East Wales



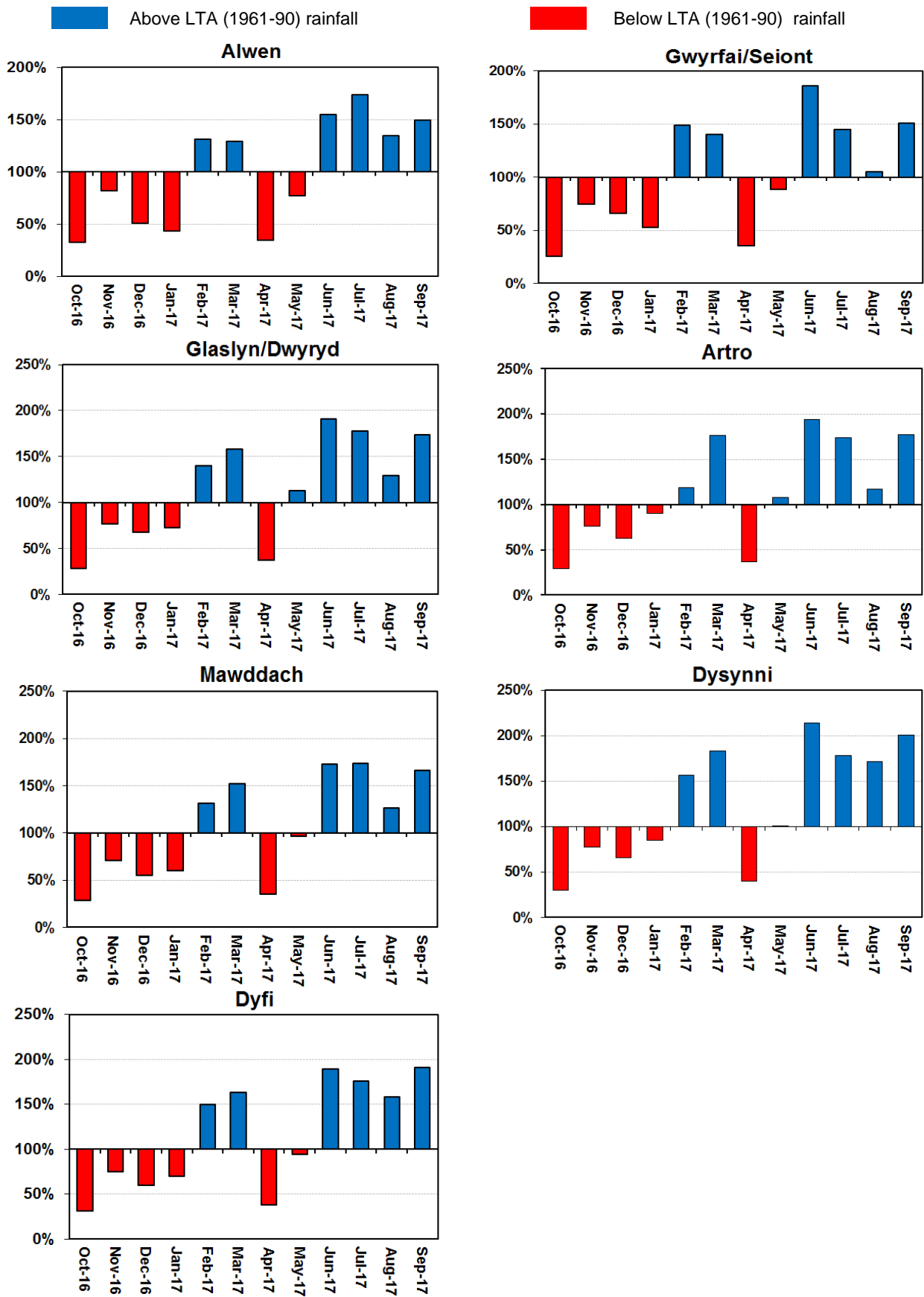
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for South East Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

Figure 5: Rainfall Charts: North Wales



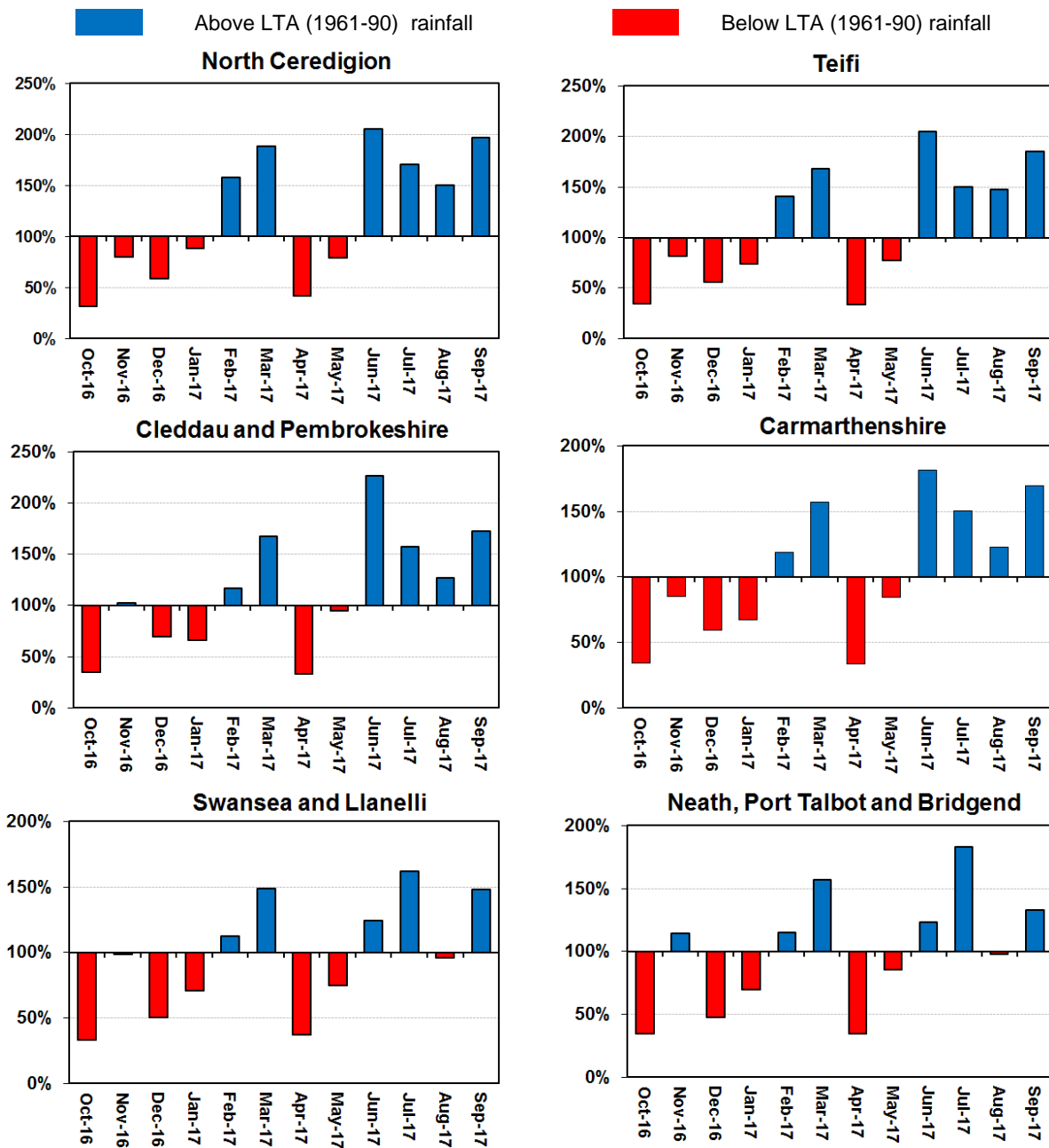
Comparison of monthly rainfall totals to the 1961-90 long term average expressed as percentage for North Wales, using NCIC (National Climate Information Centre) data (Source: Met Office © Crown Copyright).

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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).

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)

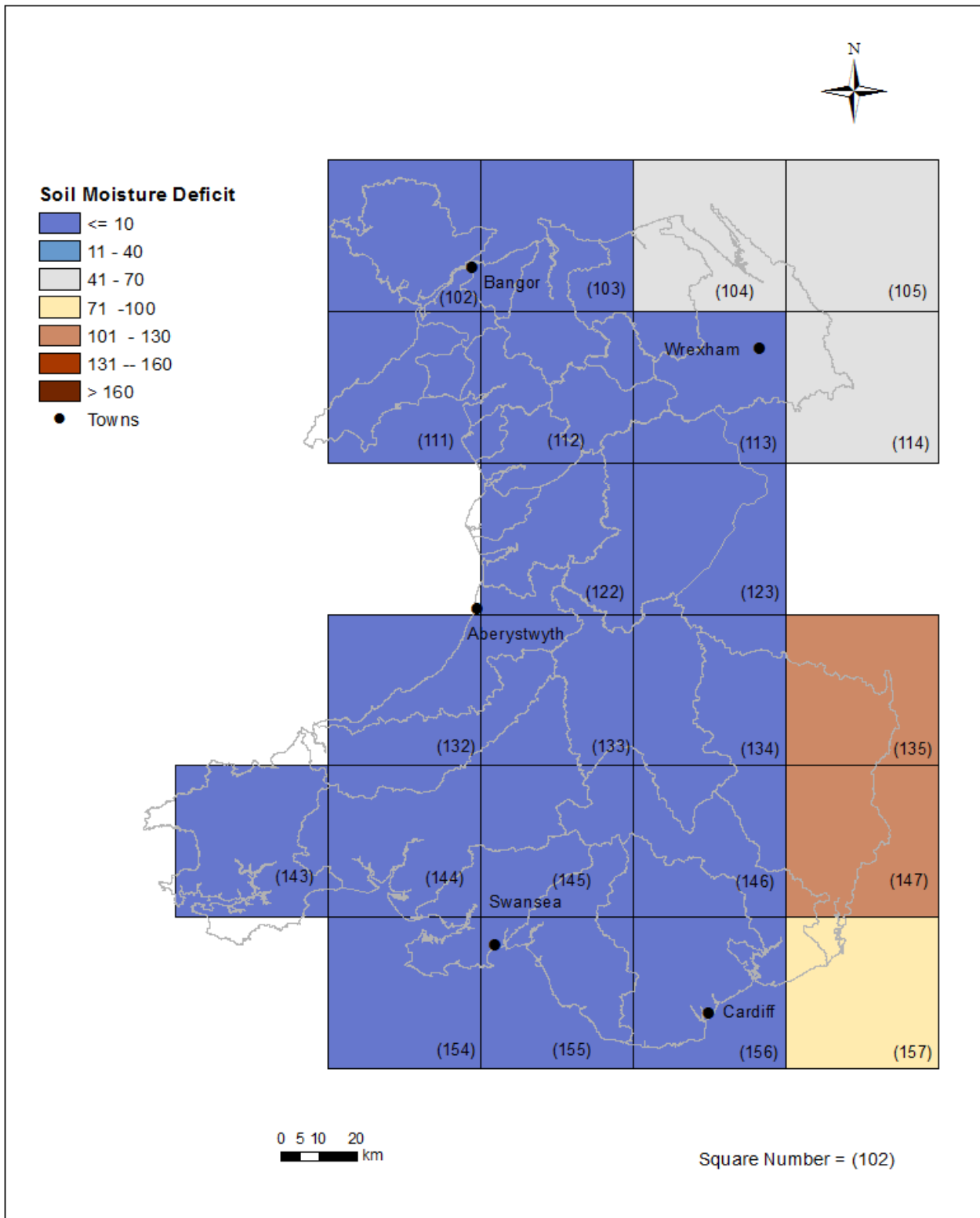


Figure 7: MORECS soil moisture deficits (mm) for September for real land use for Natural Resources Wales (Source: Met Office © Crown Copyright).

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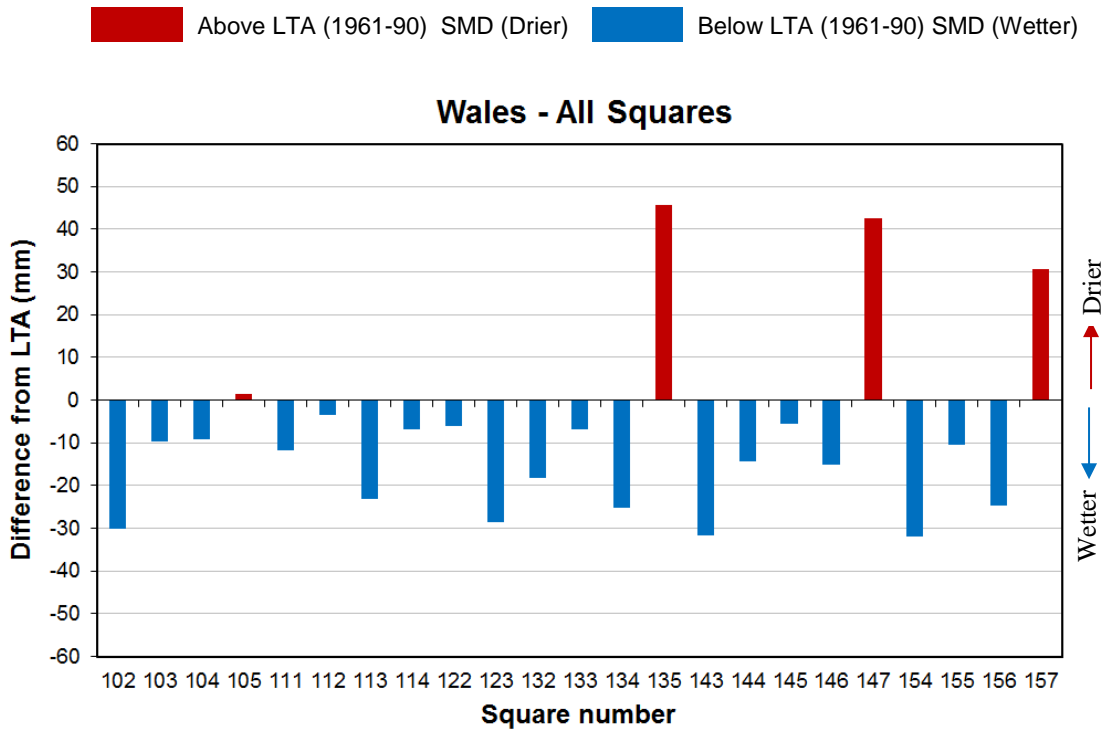


Figure 8: MORECS month end soil moisture deficits difference (mm) from the 1961-90 long term monthly average (LTA) for September for real land use for Natural Resources Wales squares (Source: Met Office © Crown Copyright).

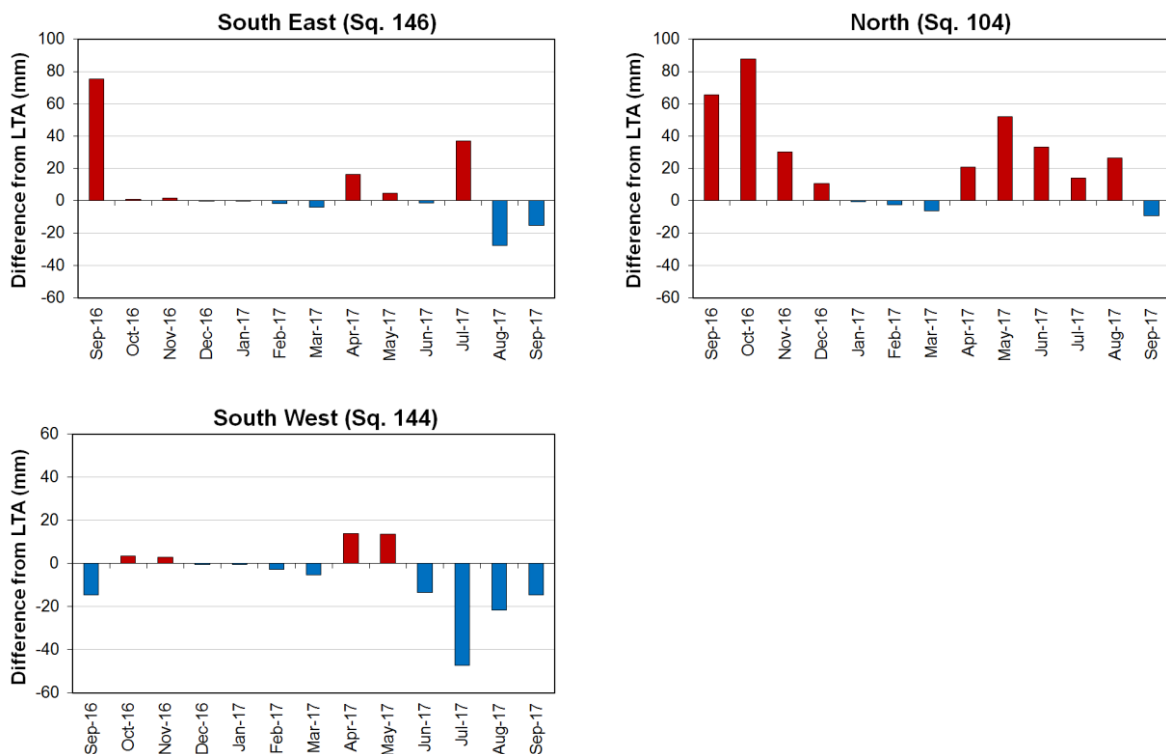


Figure 9: MORECS month end soil moisture deficit difference (mm) from the 1961-90 long term monthly average (LTA) for real land use for South East, North and South West (Source: Met Office © Crown Copyright). (Note: no LTA available for Natural Resources Wales.)

River Flow

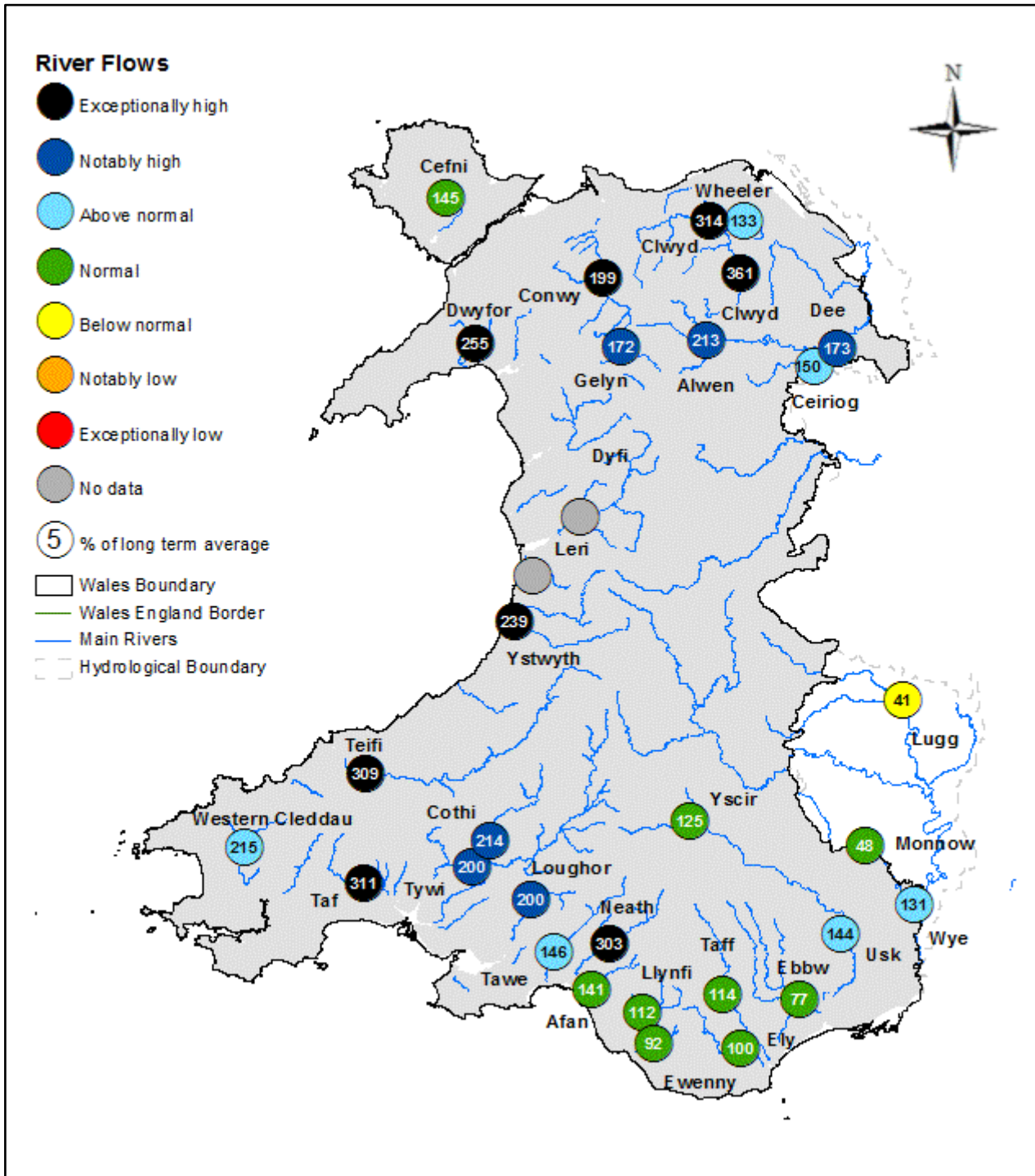


Figure 10: Monthly mean river flow for September, classed relative to analysis of historic September monthly means (Source: Natural Resources Wales).

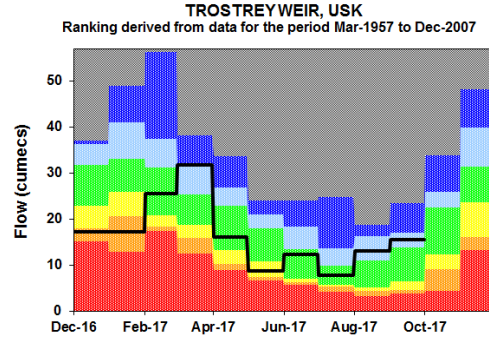
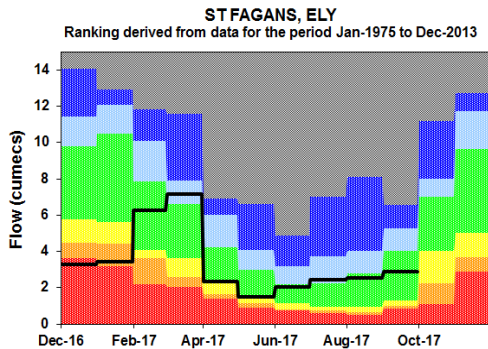
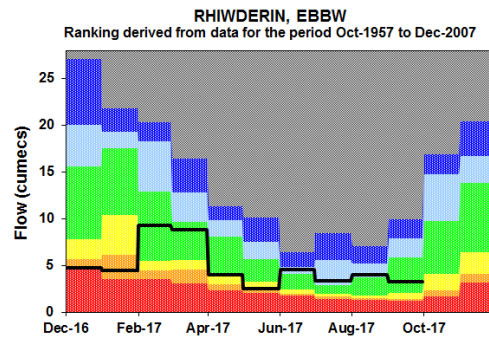
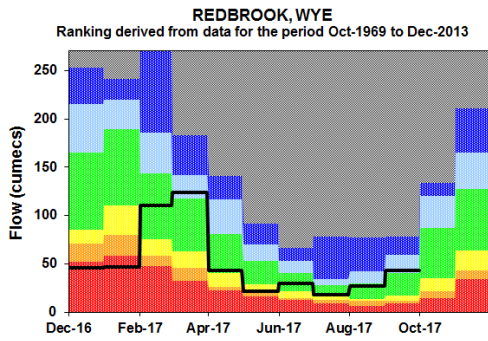
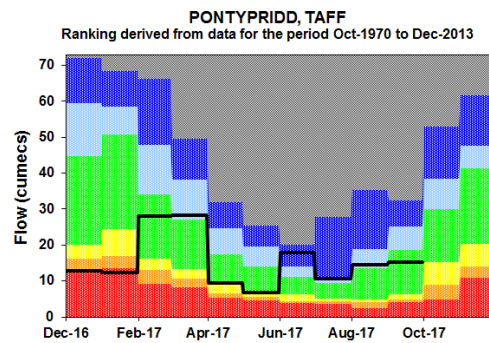
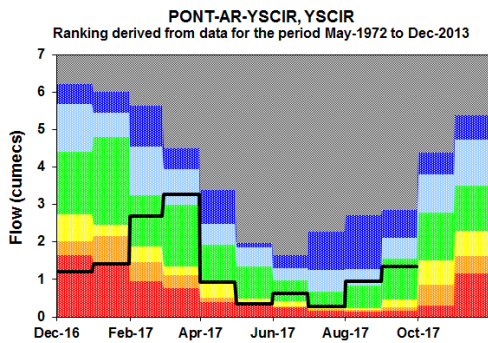
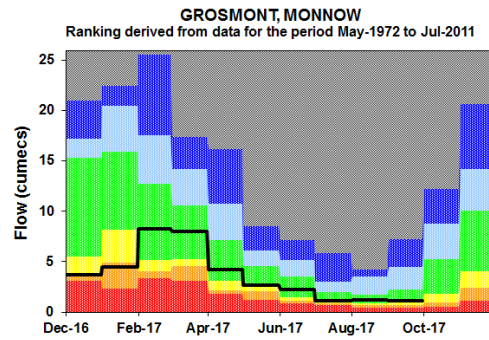
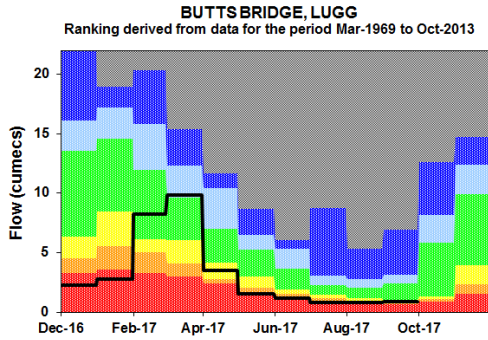
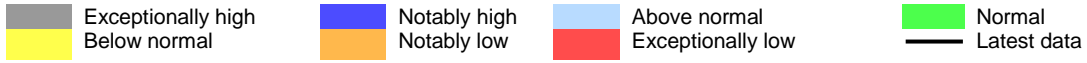
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SITE NAME	RIVER	September 2017			September 2016		September LTA		
		Class	% of LTA	Flow (m3/s)	% of LTA	Flow (m3/s)	LTA	Monthly Min (m3/s)	Monthly Max (m3/s)
River Flow Sites : South East Area									
Butts Bridge	Lugg	Below normal	41%	0.89	49%	1.06	2.18	0.65	9.64
Grosmont	Monnow	Normal	48%	1.09	67%	1.51	2.25	0.43	13.60
Pont ar Yscir	Yscir	Normal	125%	1.34	120%	1.28	1.07	0.13	3.95
Pontypridd	Taff	Normal	114%	15.20	157%	21.00	13.36	3.67	41.60
Redbrook	Wye	Above normal	131%	42.70	88%	28.80	32.65	7.85	121.00
Rhiwderin	Ebbw	Normal	77%	3.29	107%	4.59	4.30	0.80	14.60
St Fagans	Ely	Normal	100%	2.88	130%	3.73	2.88	0.67	11.90
Trostrey Weir	Usk	Above normal	144%	15.50	120%	12.90	10.74	3.27	24.70
River Flow Sites : North Area									
Bodfari	Wheeler	Above normal	133%	0.53	73%	0.29	0.40	0.20	1.01
Bodffordd	Cefni	Normal	145%	0.29	70%	0.14	0.20	0.01	0.78
Brynkinalt Weir	Ceiriog	Above normal	150%	2.55	35%	0.59	1.70	0.35	6.67
Cwmlanerch	Conwy	Exceptionally high	199%	32.00	98%	15.80	16.06	1.37	36.50
Cynefail	Gelyn	Notably high	172%	1.05	87%	0.53	0.61	0.08	1.41
Dol y Bont	Leri	No data					1.38	0.22	2.72
Druid	Alwen	Notably high	213%	6.57	57%	1.77	3.08	0.72	8.81
Dyfi bridge	Dyfi	No data					17.36	4.16	36.30
Garndolbenmaen	Dwyfor	Exceptionally high	255%	5.82	165%	3.76	2.28	0.52	4.49
Manley Hall	Dee	Notably high	173%	35.10	75%	15.10	20.26	9.23	50.20
Pont y Cambwll	Clwyd	Exceptionally high	314%	8.57	43%	1.18	2.73	0.52	9.73
Ruthin Weir	Clwyd	Exceptionally high	361%	1.66	26%	0.12	0.46	0.04	1.83
River Flow Sites : South West Area									
Capel Dewi	Tywi	Notably high	200%	49.30	129%	31.90	24.68	4.96	76.50
Clog y Fran	Taf	Exceptionally high	311%	11.90	128%	4.90	3.83	0.51	15.30
Coytrahen	Llynfi	Normal	112%	2.08	151%	2.79	1.85	0.39	5.06
Felin Mynachdy	Cothi	Notably high	214%	15.90	147%	10.90	7.42	0.93	23.90
Glanteifi	Teifi	Exceptionally high	309%	52.00	92%	15.40	16.82	1.07	48.70
Keepers Lodge	Ewenny	Normal	92%	1.13	116%	1.43	1.23	0.39	4.60
Marcroft	Afan	Normal	141%	5.83	162%	6.70	4.14	0.91	8.58
Pont Llolwyn	Ystwyth	Exceptionally high	239%	10.60	88%	3.91	4.43	0.71	10.70
Treffgarne *	Western Cleddau	Above normal	215%	3.09	147%	2.12	1.44	0.33	3.77
Resolven	Neath	Exceptionally high	303%	21.00	165%	11.40	6.92	0.98	15.20
Tir-y-Dail	Loughor	Notably high	200%	2.66	192%	2.55	1.33	0.43	2.92
Ynystanglws	Tawe	Above normal	146%	14.10	188%	18.20	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

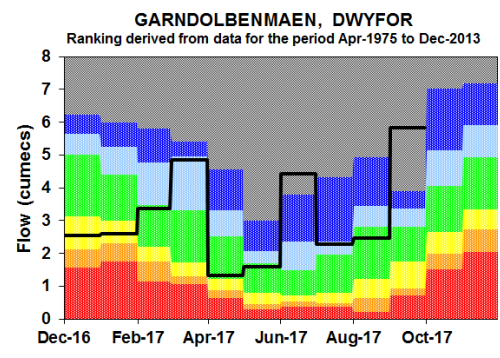
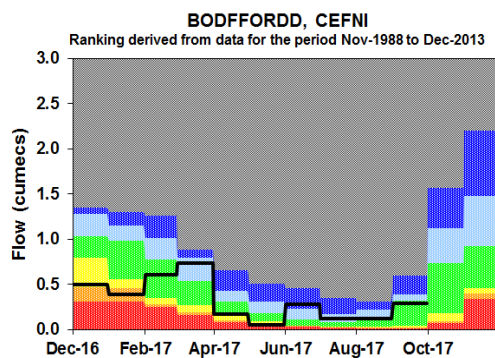
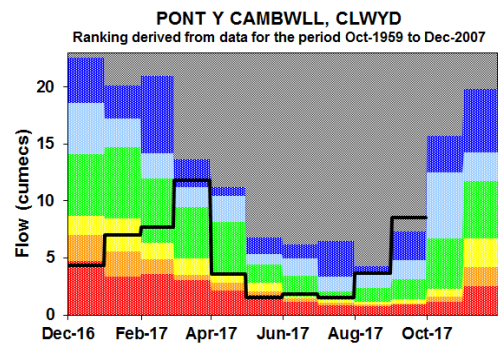
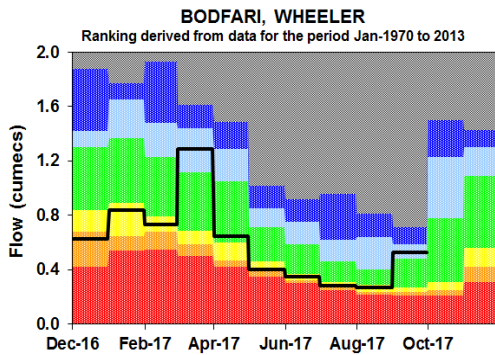
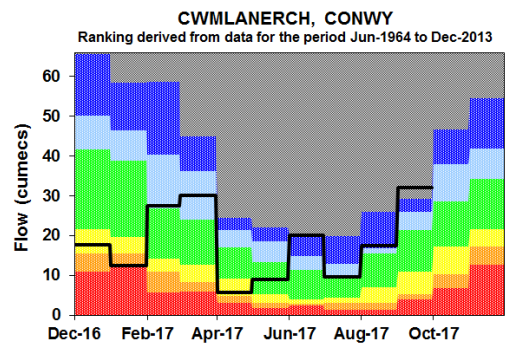
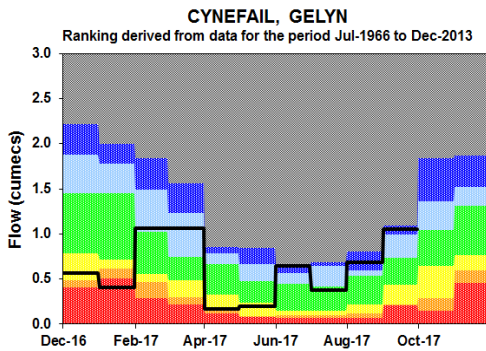
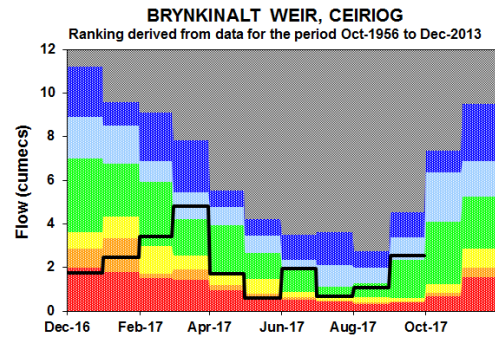
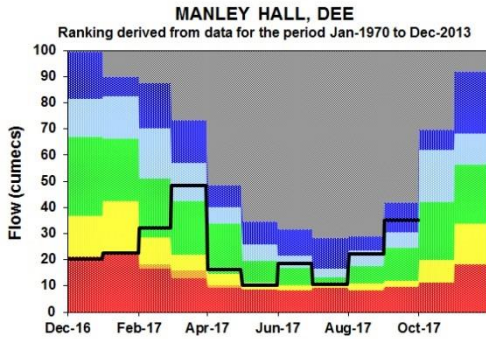
Figure 12: River Flow Charts: South East Wales



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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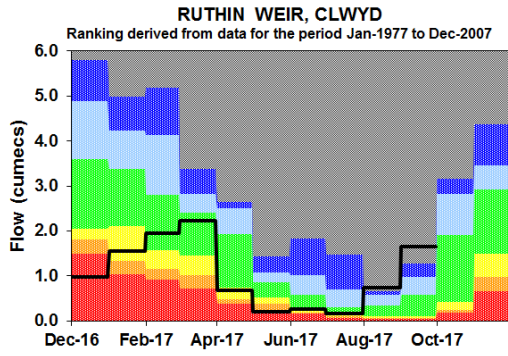
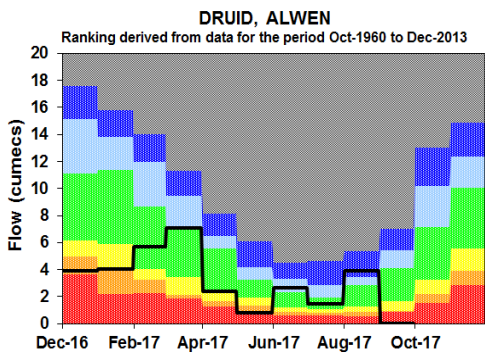
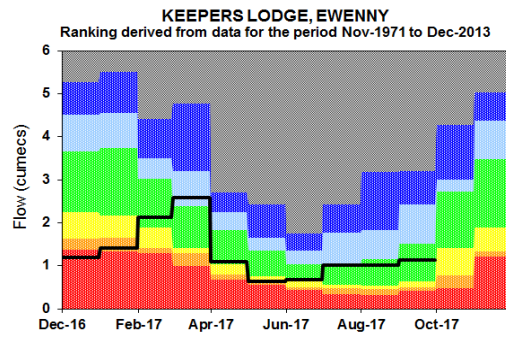
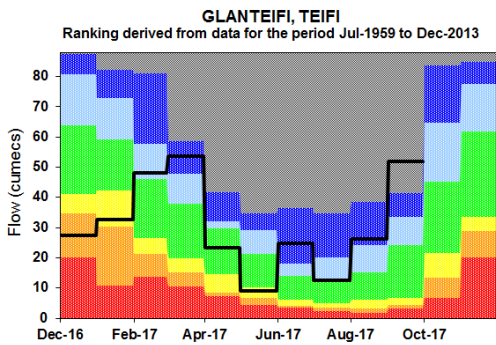
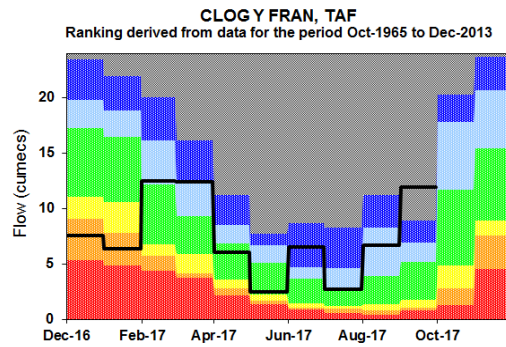
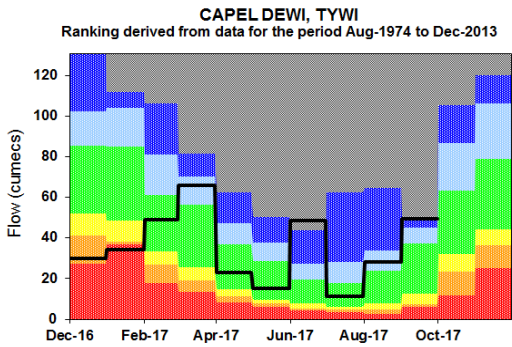
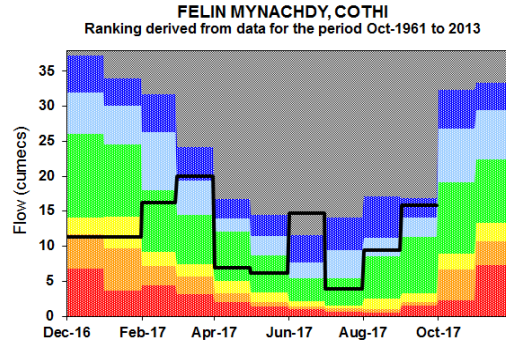
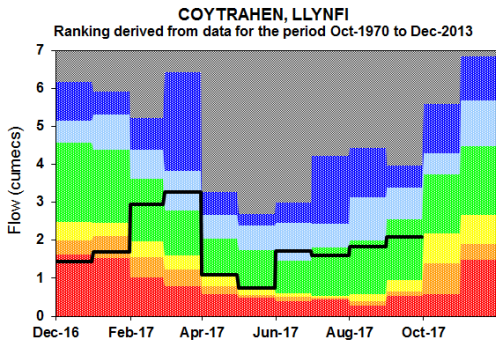
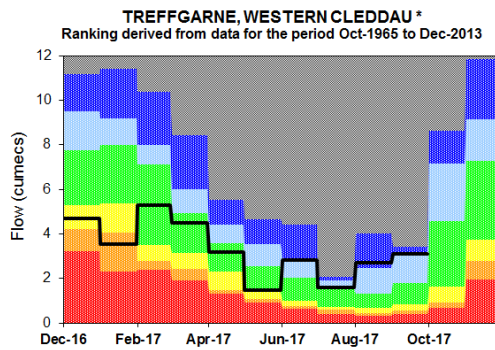
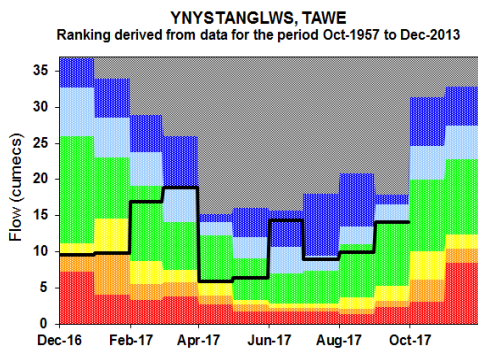
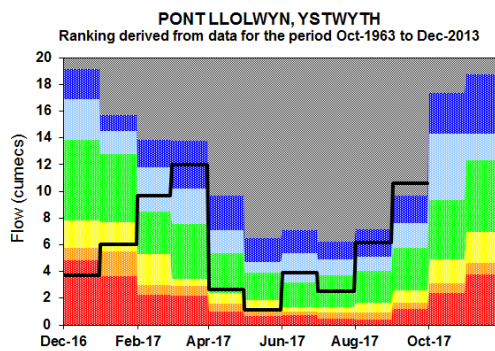
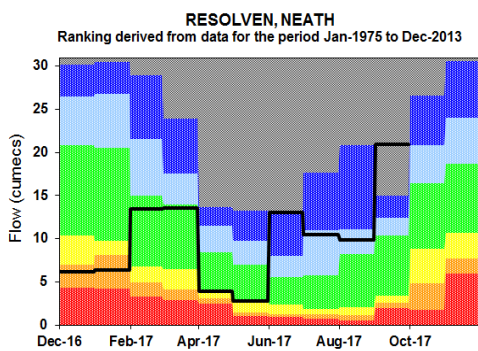
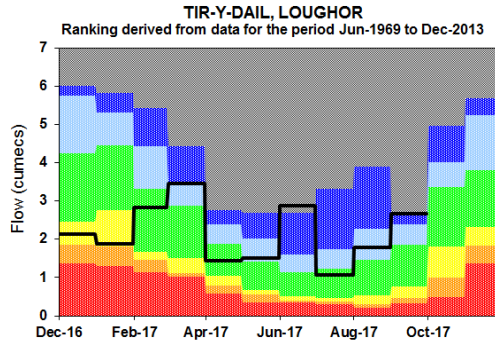
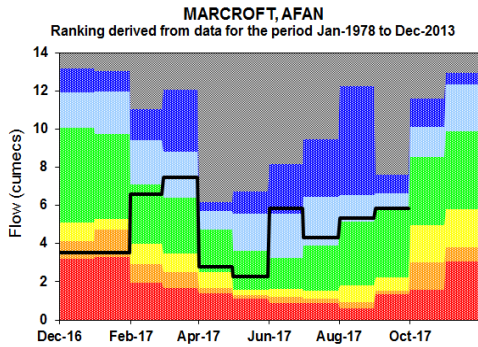


Figure 14: River Flow Charts: South West Wales



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

(* Please note that for Treffgarne station the ranking bands were derived using scaled historical flows (1965-2003) from the downstream station at Prendergast Mill)

Groundwater Levels

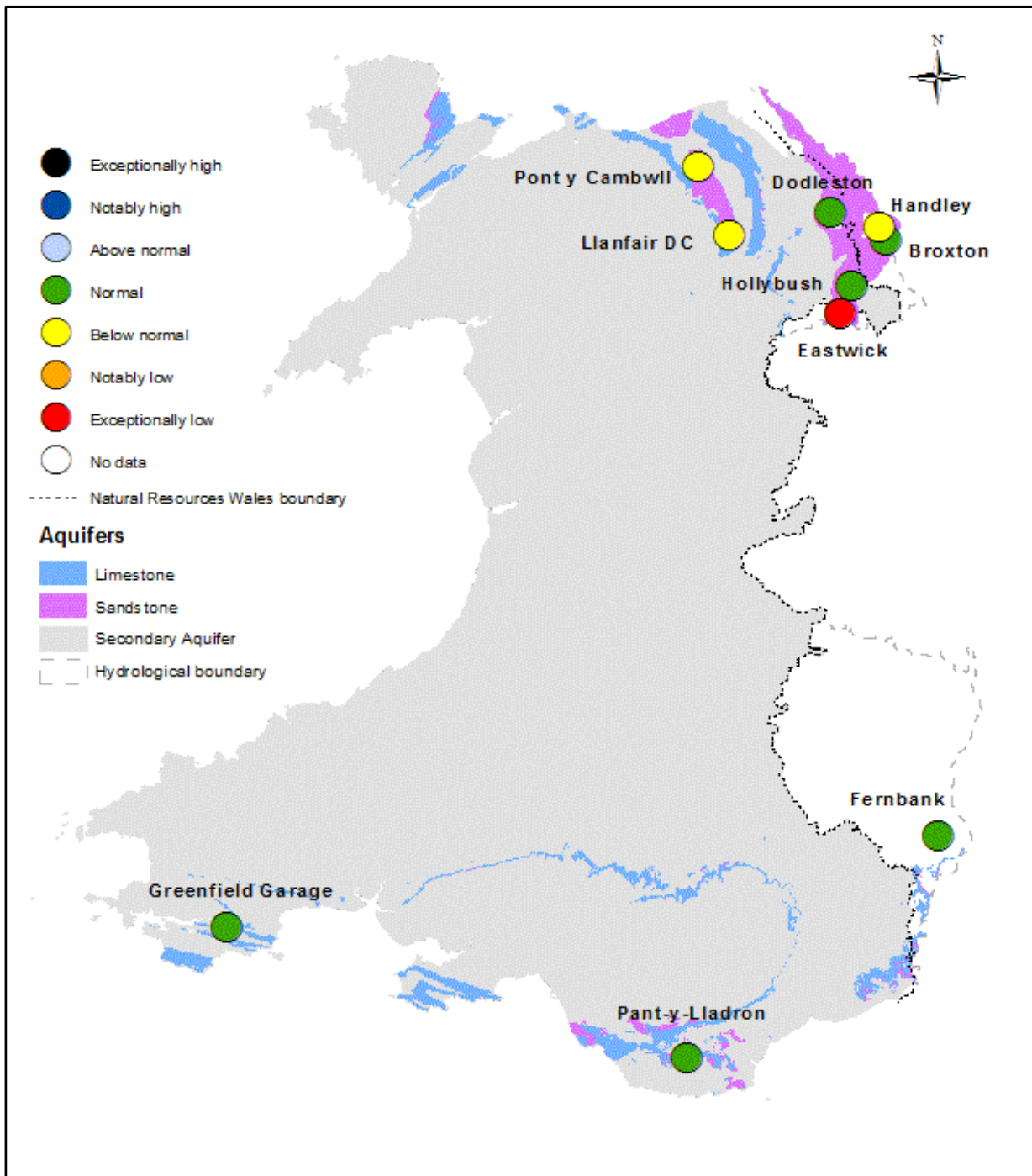
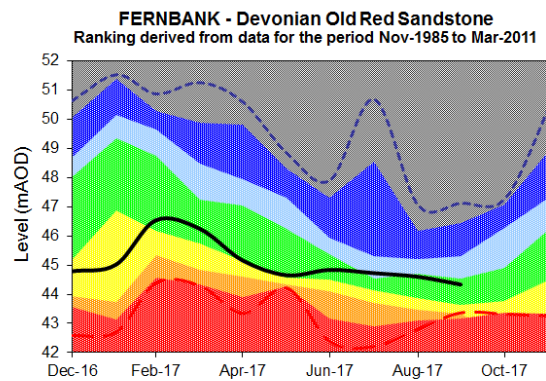
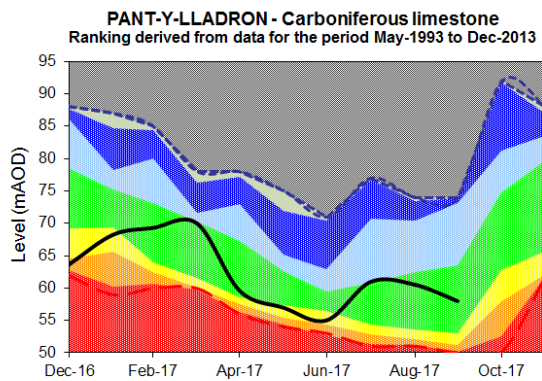
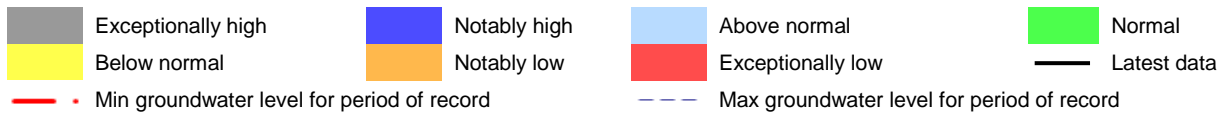


Figure 15: Groundwater levels at the end of month classed relative to an analysis of historic September groundwater levels (Source: Natural Resources Wales and Environment Agency).

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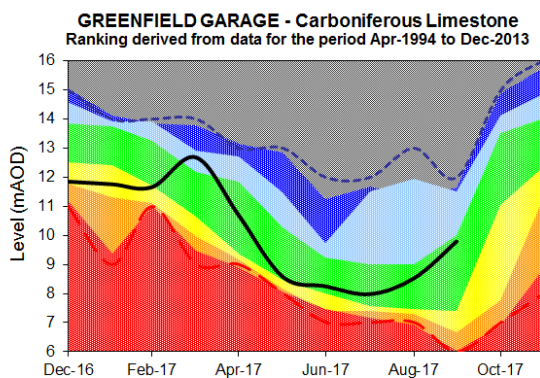
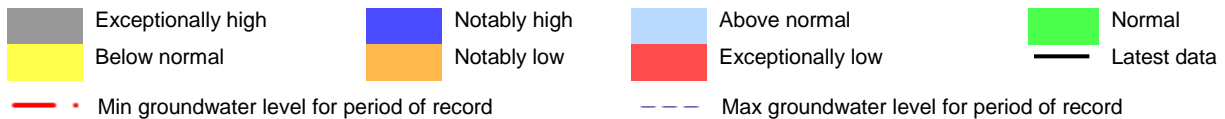
Groundwater charts

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).

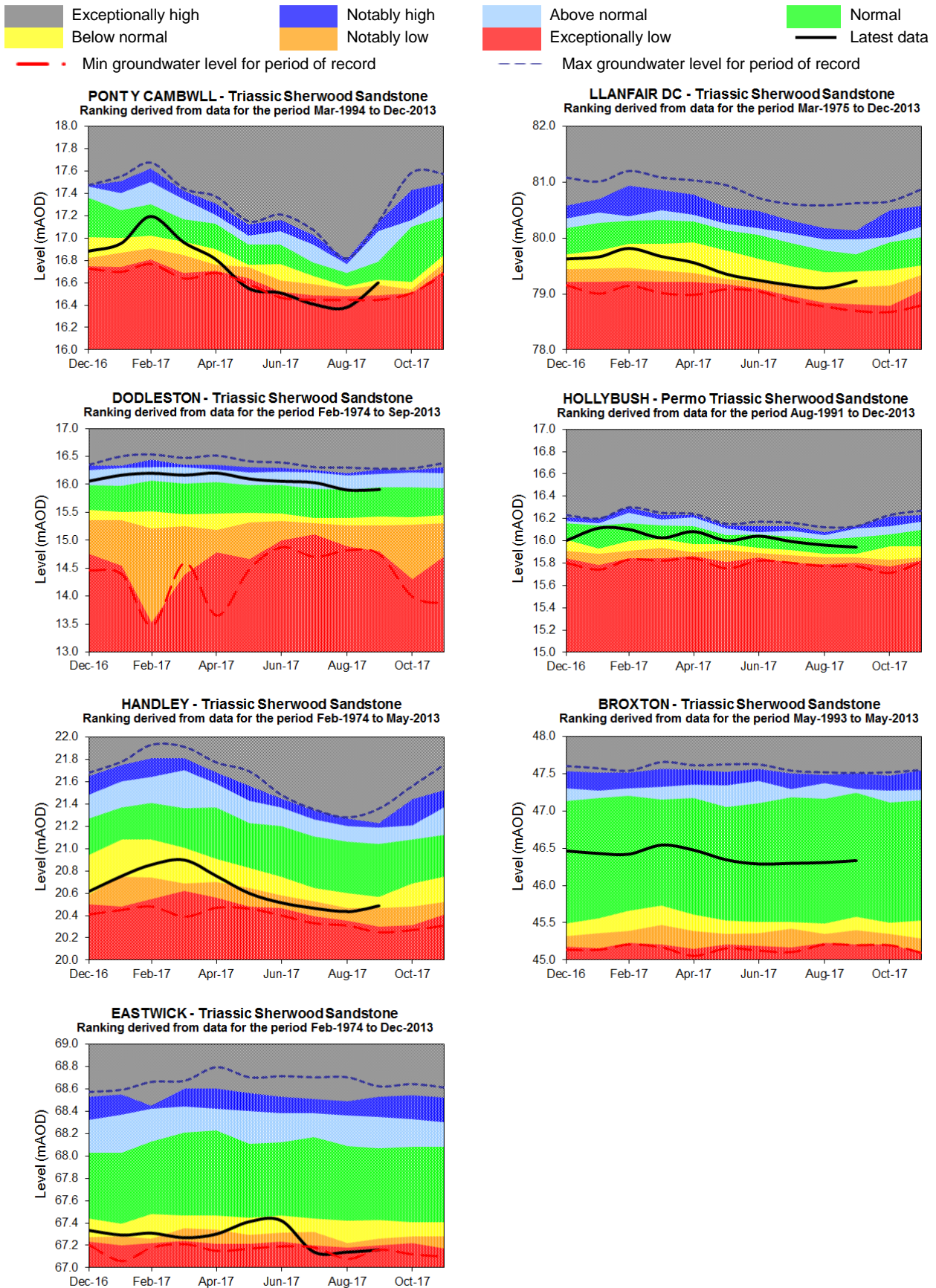
Figure 17: Groundwater level charts: South West Wales



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

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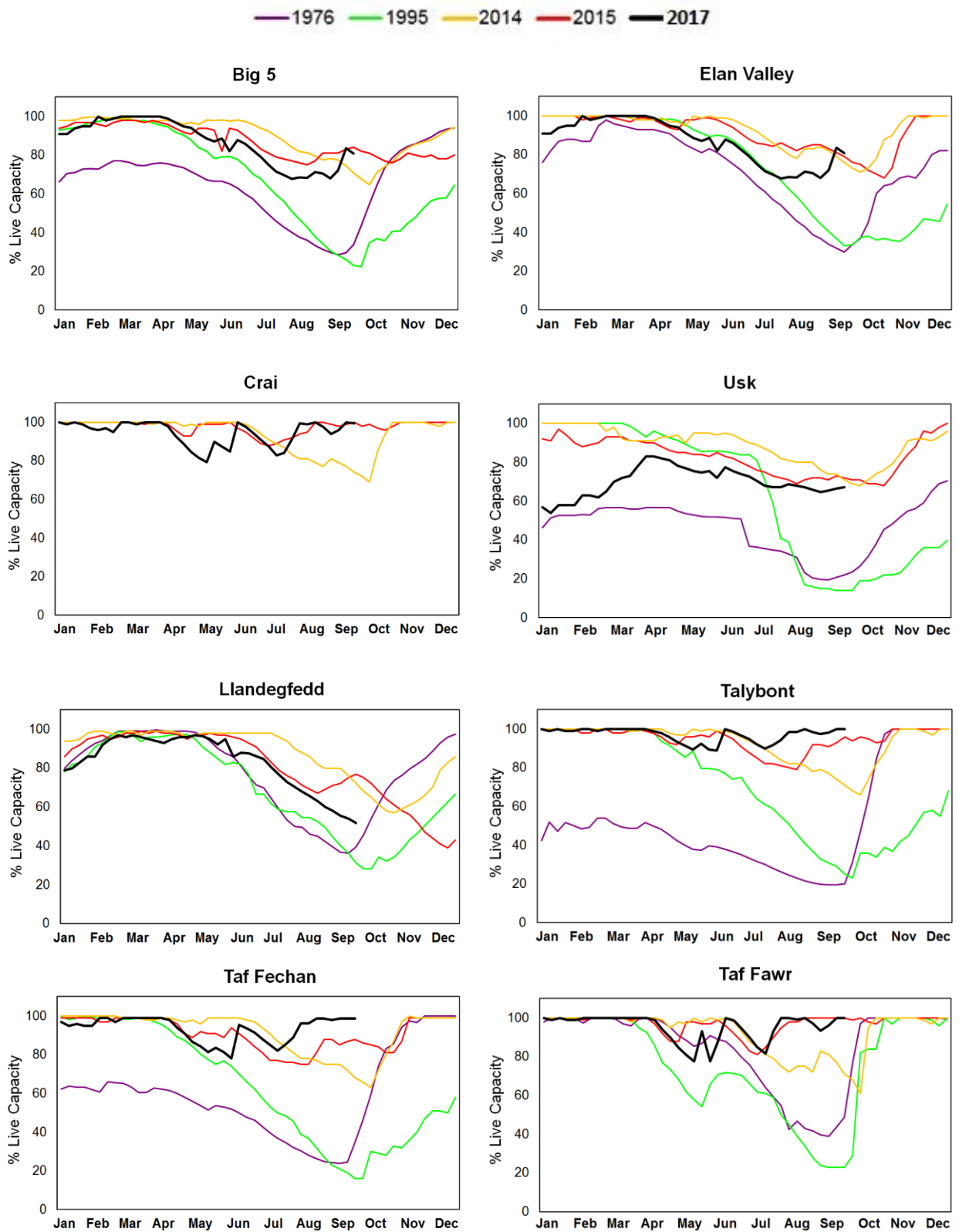
Figure 18: Groundwater level charts: North Wales



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

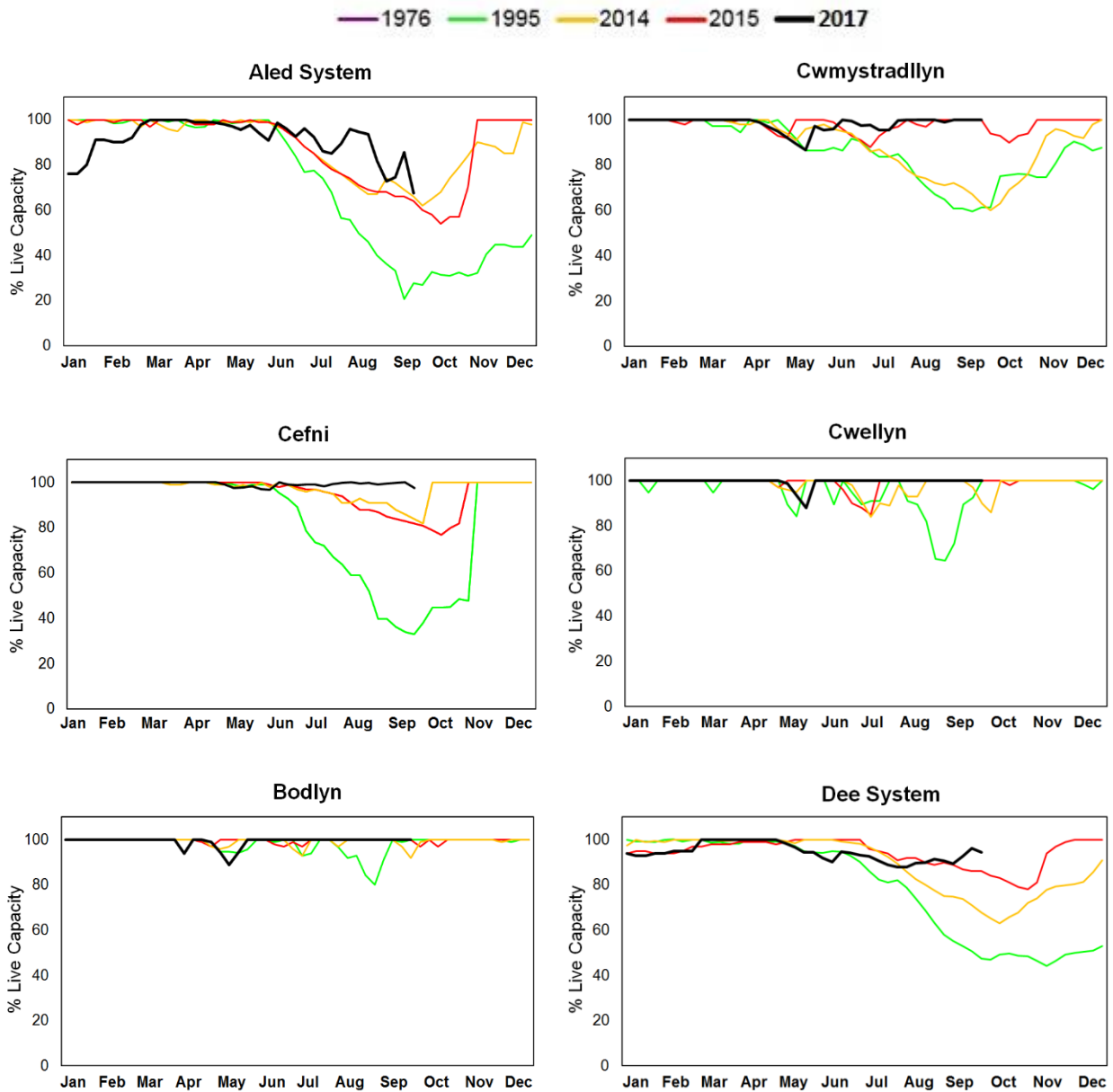
Reservoir Storage

Figure 19: Reservoir charts: South East Wales



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

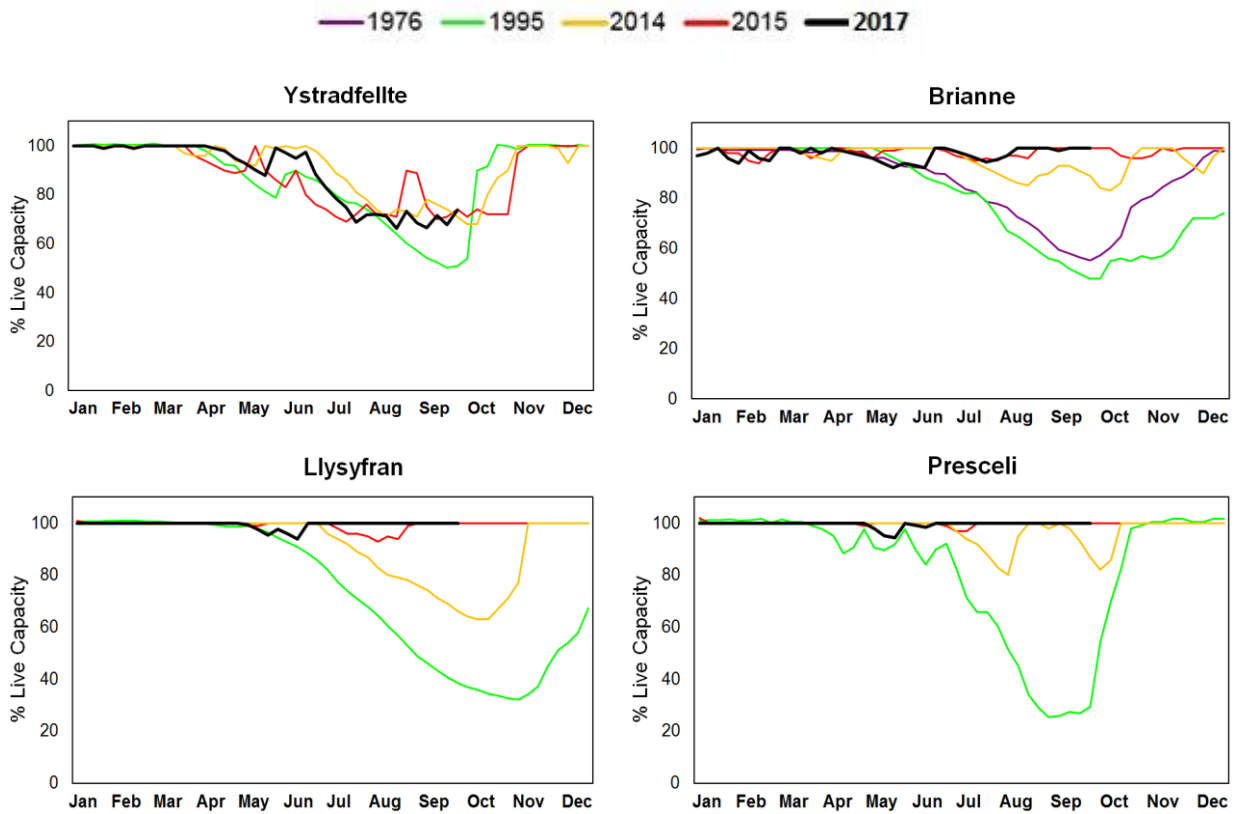
Figure 20: Reservoirs charts: North Wales



Weekly reservoir stocks for Natural Resources Wales index sites (Source: Welsh Water).
 (Please note that the drawdown for the Aled system was due to maintenance of the reservoirs)

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Figure 21: Reservoirs charts: South West Wales



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

Glossary

Term	Definition
Aquifer	A geological formation able to store and transmit water.
Areal average rainfall	The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).
Effective rainfall	The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).
Groundwater	The water found in an aquifer
Meteorological Office Rainfall and Evaporation Calculating System (MORECS)	The Met Office provides climate data for grid squares measuring 40km by 40km across the UK using MORECS
Recharge	The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).
Reservoir live capacity	The reservoir capacity normally usable for storage to meet established reservoir operating requirements. It is the total capacity less that not available because of operating agreements or physical restrictions. Only under abnormal conditions, such as a severe water shortage might this additional water be extracted.
Soil moisture deficit (SMD)	The difference between the amount of water actually in the soil and the amount of water that the soil can hold. Expressed in depth of water (mm).

Categories

Exceptionally high	Value likely to fall within this band 5% of the time
Notably high	Value likely to fall within this band 8% of the time
Above normal	Value likely to fall within this band 15% of the time
Normal	Value likely to fall within this band 44% of the time
Below normal	Value likely to fall within this band 15% of the time
Notably low	Value likely to fall within this band 8% of the time
Exceptionally low	Value likely to fall within this band 5% of the time

Units

cumecs	Cubic metres per second ($\text{m}^3 \text{s}^{-1}$)
mAOD	Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).