

Weekly water situation report

Wednesday 25 – Tuesday 31 January 2012

Summary

This week has seen a return to the drier conditions in eastern areas experienced earlier in January with soil moisture deficits remaining similar to last week. River flows have decreased at the majority of our sites, with five sites now *exceptionally low* for the time of year. Groundwater levels remain very low at the majority of our indicator sites, with eleven sites *exceptionally low* for the time of year. Reservoir stocks are *normal* for the time of year at the majority of reported reservoirs or reservoir groups.

Rainfall

This week has been drier across eastern England but wetter across western England and Wales. Rainfall totals range from 5mm in our Anglian Region to 26mm in EA Wales. After above average rainfall in December, January has been drier with all regions receiving less than the January long term average (LTA). Totals ranged from 64% of the January LTA in our South West Region to 96% in our North West Region (Figures 1 and Table 1).

Soil Moisture Deficit

Soil moisture deficits (SMDs) have decreased slightly in all our regions except for our North West Region and EA Wales where they have increased slightly. Deficits remain close to zero in western areas, and elsewhere range from 8mm in our North East Region to 49mm in our Anglian Region. The SMD in our Anglian Region remains well above the 1976 level (Figure 2).

River Flows

The drier weather this week in eastern England has resulted in river flows falling again at the majority of our indicator sites. All the indicator sites in south east England and East Anglia are now *below normal* or lower for the time of year, with five sites now *exceptionally low*. The wetter weather in western England has meant the majority of sites in western England and Wales are currently *normal* for the time of year (Figures 3 and 4).

Groundwater Levels

Groundwater levels remain *below normal* or lower for the time of year at the majority of our indicator sites, with eleven indicator sites now *exceptionally low* for the time of year up from ten last week. There are currently only five sites that are *above normal* or higher for the time of year, most located in north west England and south Wales (Figure 5).

Reservoir Stocks

Stocks in reported reservoirs and reservoir groups have increased or remained similar to last week at the majority of sites. Stocks are now *normal* for the time of year at the majority of reported reservoirs and reservoir groups, although Bewl and Ardingly are now both *exceptionally low* for the time of year (Figure 7). Regional stocks have decreased in our northern and central regions and increased elsewhere (Figure 8).

Outlook

Conditions will continue to be predominantly dry for all regions during the rest of Thursday and Friday, although some sleet and snow is possible in south east England. The weekend will see a change to more unsettled conditions with rain, sleet and snow for much of England and Wales. Monday and Tuesday are expected to remain unsettled in northern and western England and Wales while southern and eastern England will see a return to drier conditions.

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Rainfall

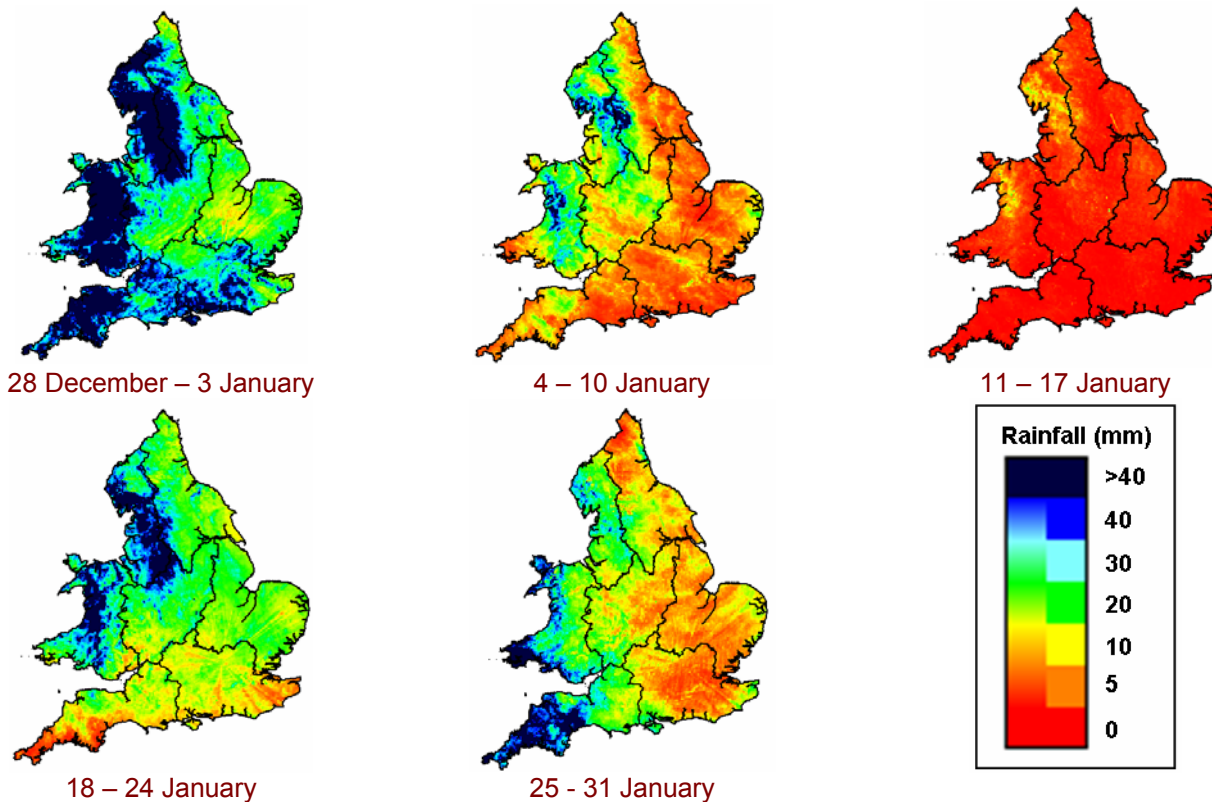


Figure 1: Weekly accumulated rainfall across England and Wales for the past five weeks. MOSES (Met Office Surface Exchange Scheme) UKPP radar data (Source: Met Office © Crown Copyright). Note: Radar beam blockages in some regions may give anomalous totals in some areas.

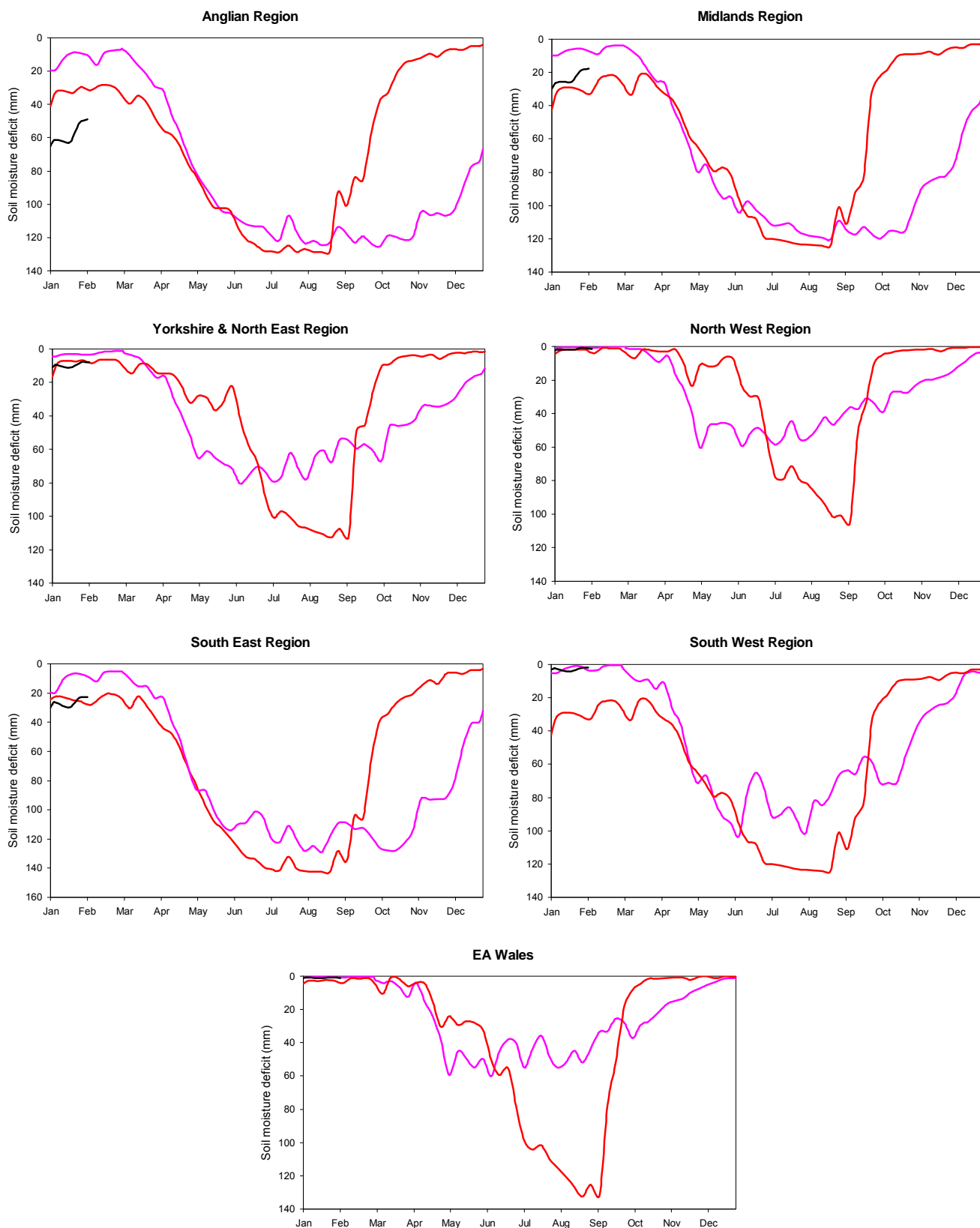
Region	Latest week: 25 - 31 Jan	Latest month to date: Jan '12			Last Month: Dec '11			Last 3 Months: Oct - Dec '11			Last 6 Months: Jul - Dec '11			Last 12 Months: Jan - Dec '11		
	Total (mm)	Total (mm)	Def (mm)	% LTA	Total (mm)	Def (mm)	% LTA	Total (mm)	Def (mm)	% LTA	Total (mm)	Def (mm)	% LTA	Total (mm)	Def (mm)	% LTA
North West	16	109	5	96	203	+	169	417	+	115	775	+	117	1308	+	113
North East	11	65	13	83	102	+	127	233	2	99	472	+	107	800	20	98
Midlands	8	53	13	80	80	+	112	169	28	86	281	93	75	502	213	70
Anglian	5	40	11	78	56	+	101	111	53	68	242	75	76	429	169	72
South East	6	48	23	67	88	+	116	167	52	76	332	57	85	605	123	83
South West	22	74	41	64	133	+	114	290	29	91	512	25	95	872	137	86
EA Wales	26	120	25	83	212	+	135	430	14	97	713	28	96	1241	97	93
England & Wales	13	69	19	79	118	+	126	244	22	92	450	26	94	781	100	89

Table 1: Latest rainfall summary information (Source: Met Office © Crown Copyright)¹

¹ Notes:

- LTA = long term average rainfall for 1961 – 1990
- Data for the current month are calculated using MORECS (Met Office Rainfall and Evaporation Calculation System); data for past months are provisional values from the National Climate Information Centre (NCIC).
- The data is rounded to the nearest millimetre or percent (except when values are less than 1).
- Def = Rainfall Deficit in millimetres which is the difference between the LTA and the actual rainfall over the period. Where actual rainfall over the period exceeds the LTA this is shown with the '+' symbol

Soil Moisture Deficit



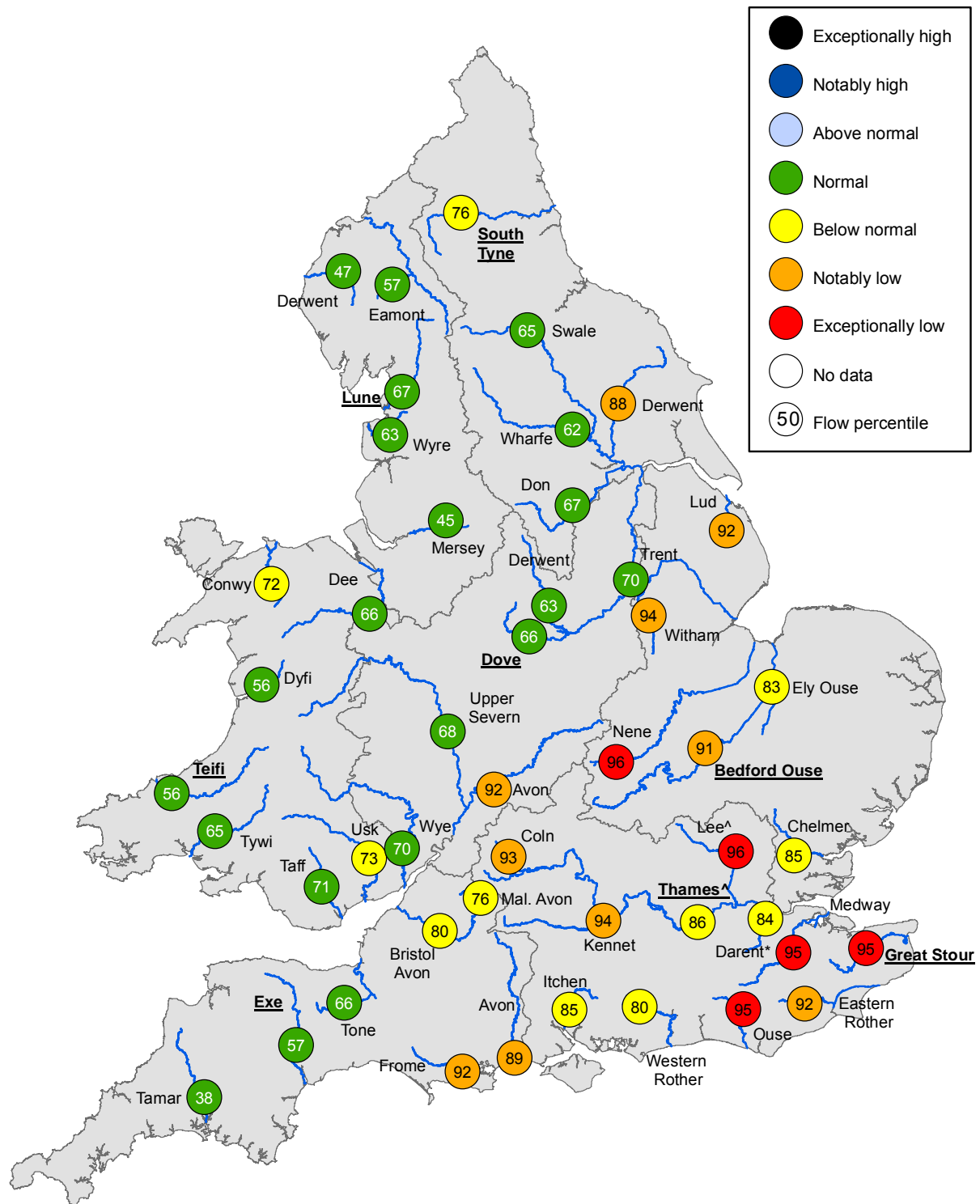
 1976	 2011	 2012
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Figure 2: MORECS soil moisture deficits for real land use for all Environment Agency Regions. (Source: Met Office © Crown Copyright)

All data are provisional and may be subject to revision.

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River Flow



^ - 'Naturalised' flows are provided for the Thames at Kingston and the Lee at Feildes Weir.

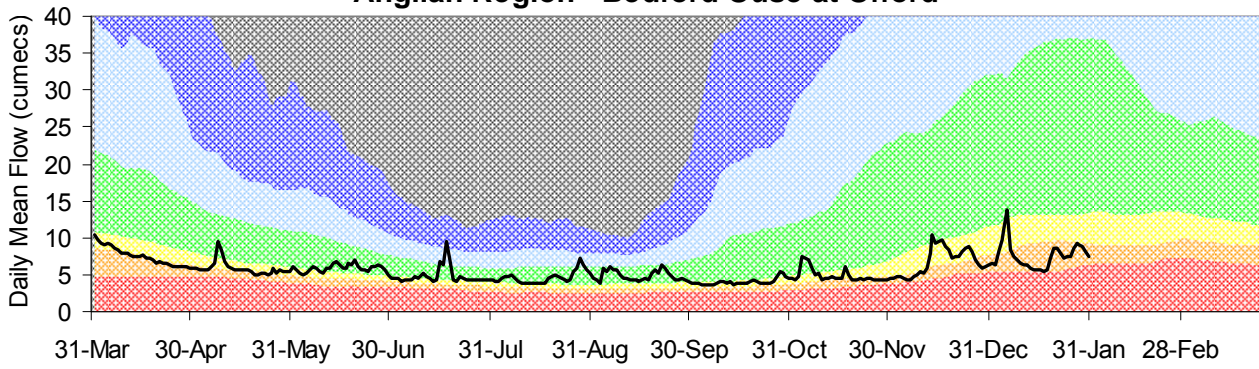
* - Flows on the Darent at Hawley are augmented during low flows by a Restoring Sustainable Abstraction (RSA) scheme.

Highlighted sites are shown in the hydrographs in figure 4.

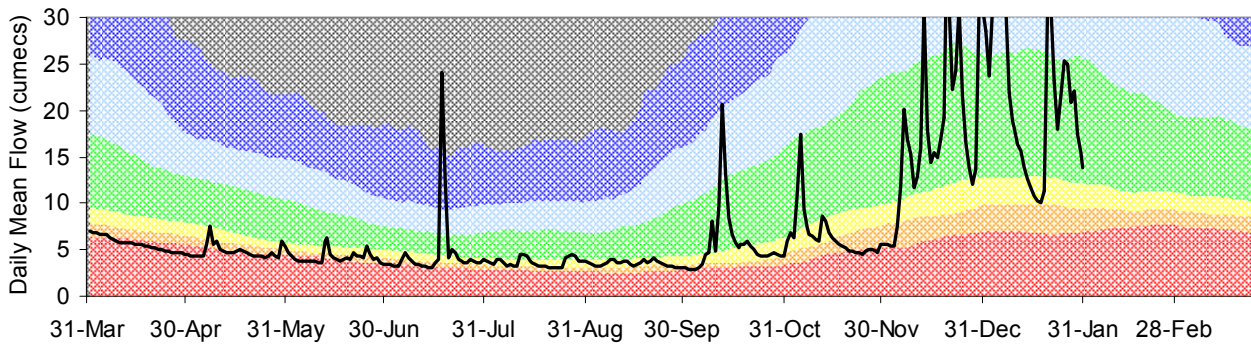
Figure 3: Latest daily mean river flow expressed as a percentile² and classed relative to an analysis of historic daily mean flows for the same time of year (Source: Environment Agency)

² Flow percentiles describe the percentage of time that a particular flow has been equalled or exceeded compared to the historic flow record for that site for the time of year. For example, a flow percentile of 5 indicates that the current flow has only been equalled or exceeded approximately 5% of the time within the historic record for that time of year – i.e. a very high flow. A flow percentile of 95 indicates that the current flow has been equalled or exceeded approximately 95% of the time – i.e. a low flow. Flow percentiles presented relate to an analysis for the time of year and not a whole year.

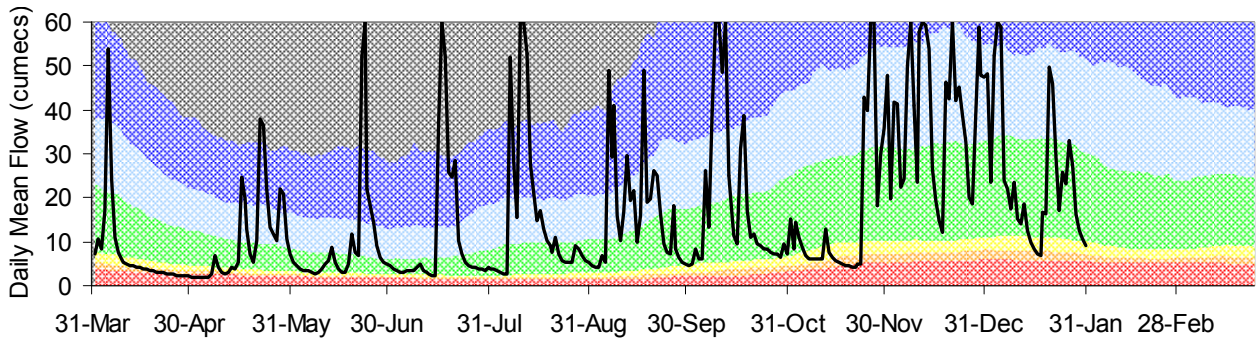
Anglian Region - Bedford Ouse at Offord



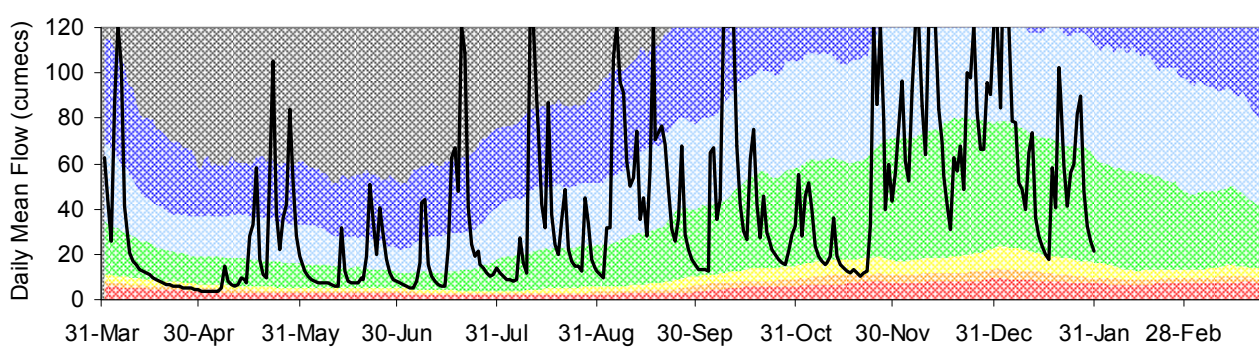
Midlands Region - Dove at Marston



Yorkshire & North East Region - South Tyne at Haydon Bridge



North West Region - Lune at Caton

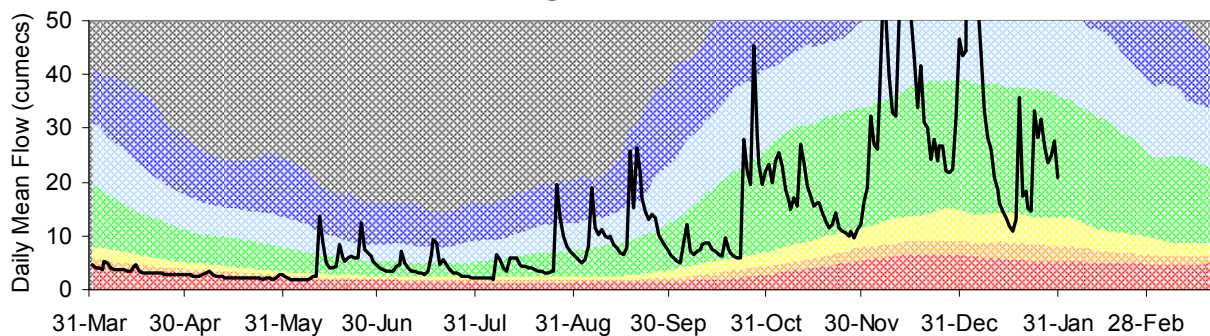


Exceptionally high	Notably high	Above normal	Normal
Below normal	Notably low	Exceptionally low	— Latest data

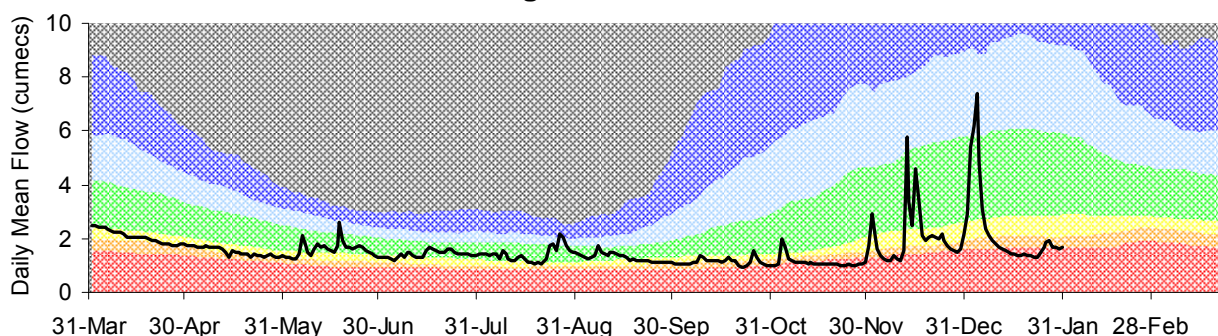
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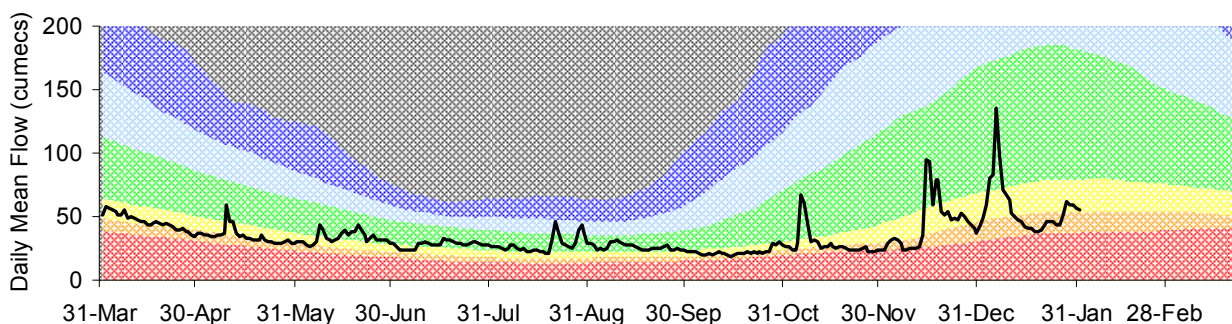
South West Region - Exe at Thorverton



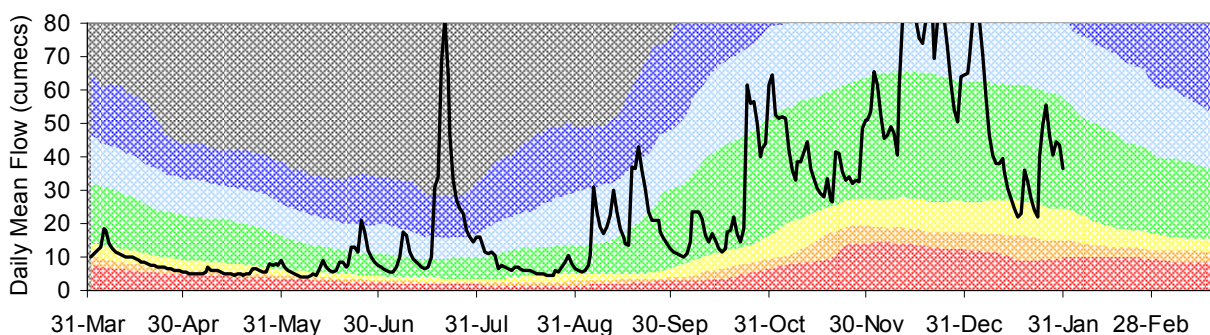
South East Region - Great Stour at Horton



South East Region - Thames at Kingston



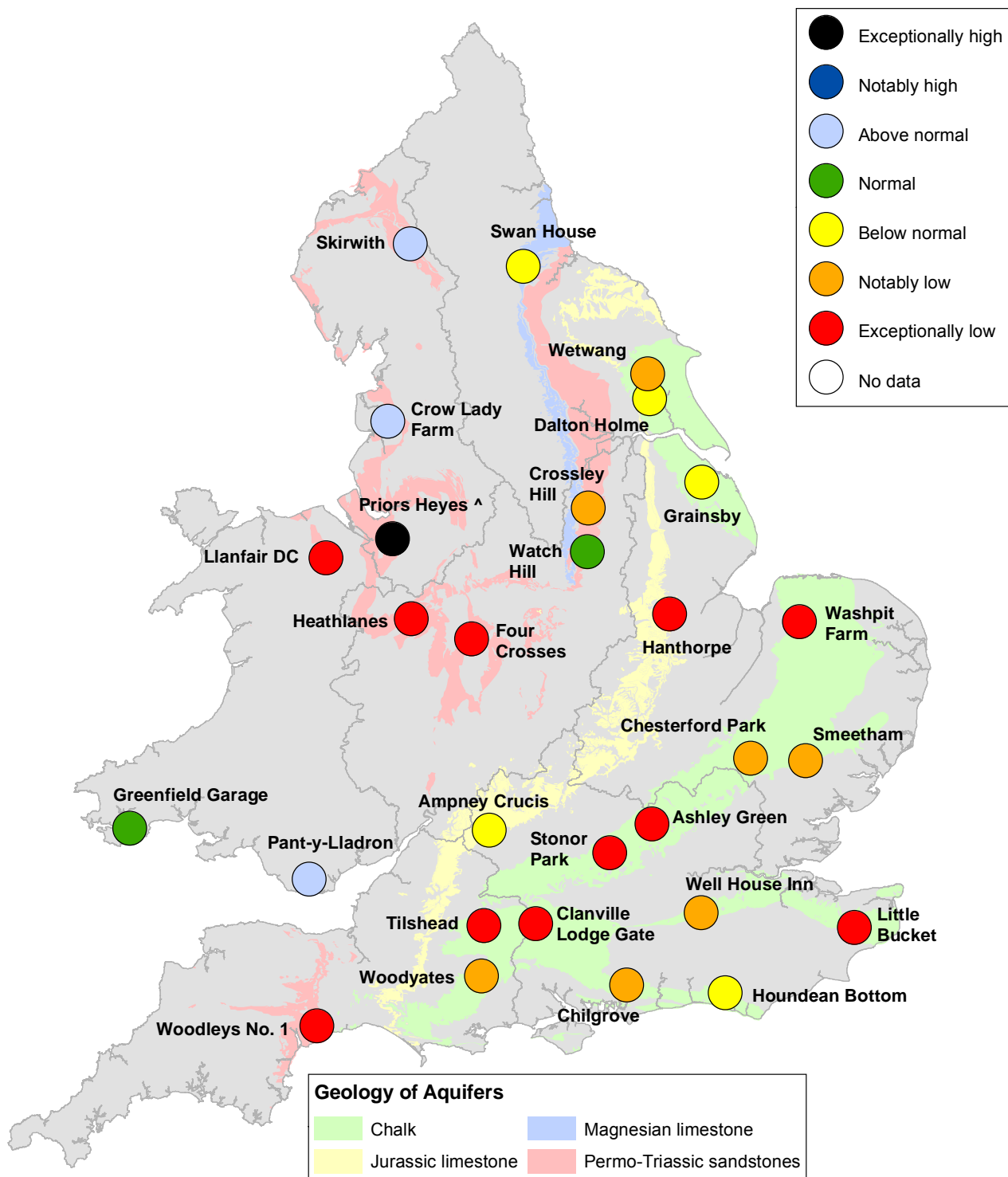
EA Wales - Teifi at Glan Teifi



Exceptionally high	Notably high	Above normal	Normal
Below normal	Notably low	Exceptionally low	Latest data

Figure 4: Index river flow sites for each Environment Agency Region. Daily mean flow for the past 10 months compared to an analysis of historic daily mean flows and long term maximum and minimum flows. See Figure 3 for locations (Source: Environment Agency)

Groundwater Levels

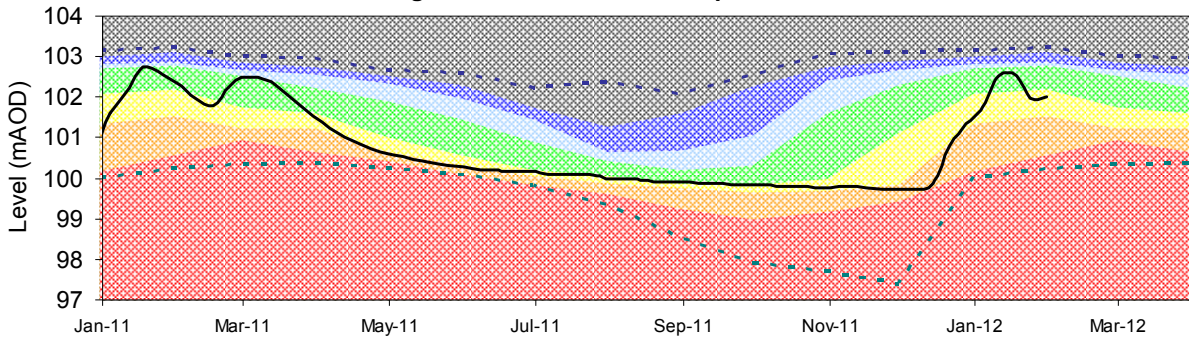


^ The borehole at Priors Heyes is no longer artesian but the level remains high compared to historic levels because the aquifer is recovering from the effects of historic abstraction.

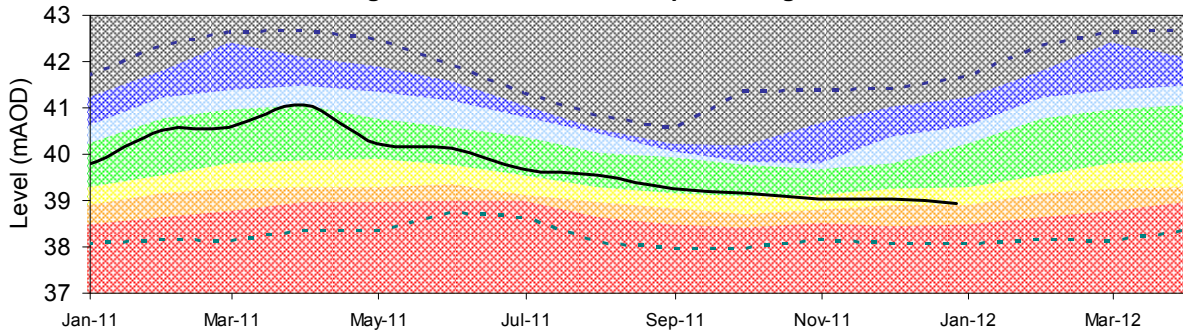
Highlighted sites are shown in the groundwater level graphs in figure 6.

Figure 5: Latest available groundwater levels for indicator sites for the week ending 31 January, classed relative to an analysis of historic values for the same time of year (Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS © NERC.. Crown copyright. All rights reserved. Environment Agency, 100026380, 2012

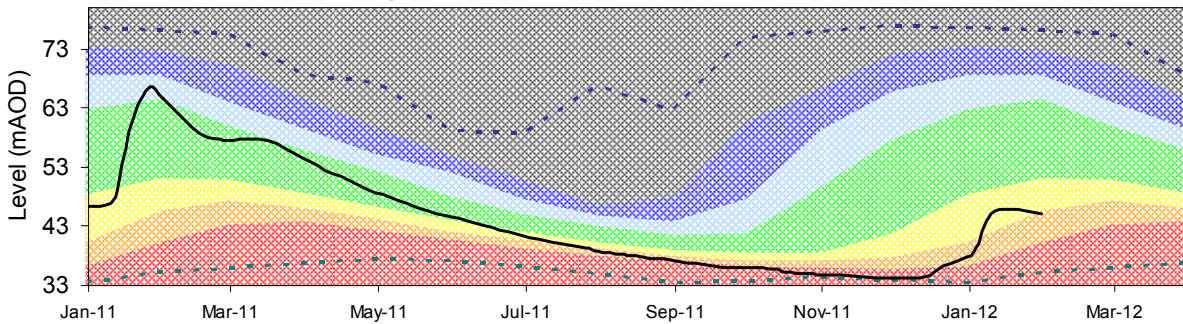
Ampney Crucis (Jurassic limestone)
 Ranking derived from data for the period Dec-1958 to Dec-2007



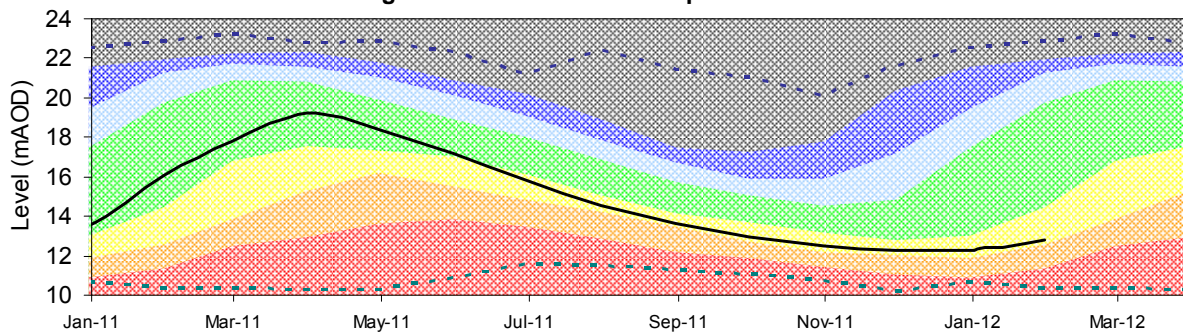
Chesterford Park (Chalk)
 Ranking derived from data for the period Aug-1963 to Dec-2007



Chilgrove (Chalk)
 Ranking derived from data for the period Feb-1836 to Dec-2007



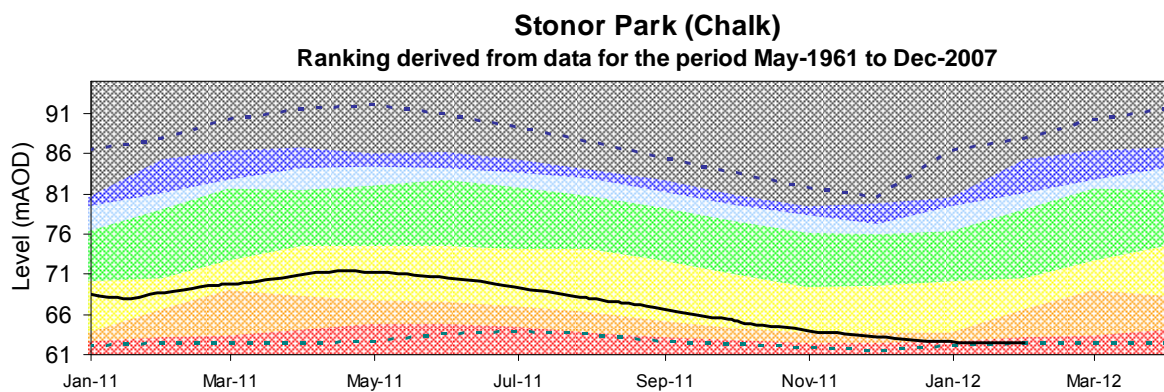
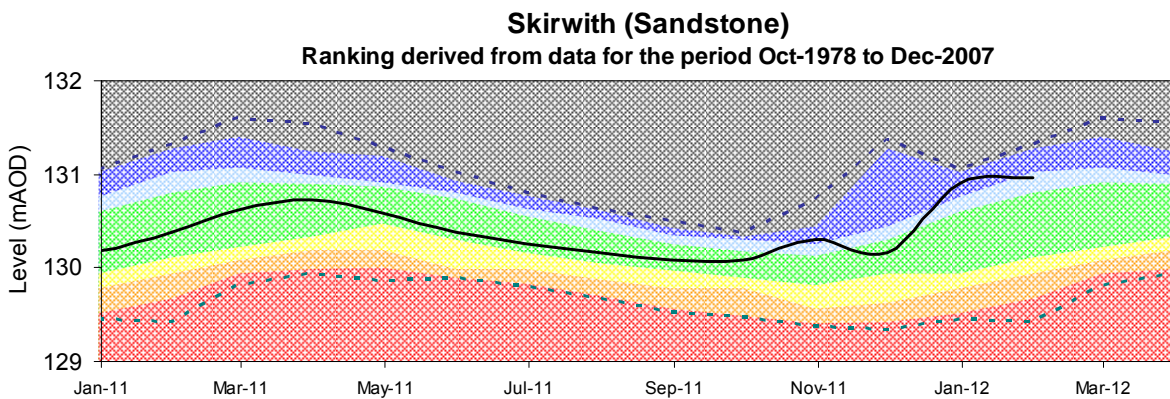
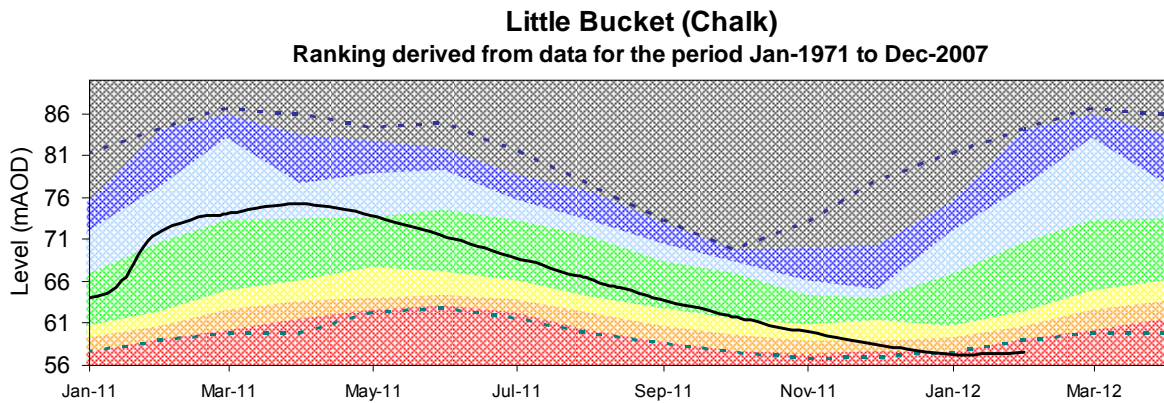
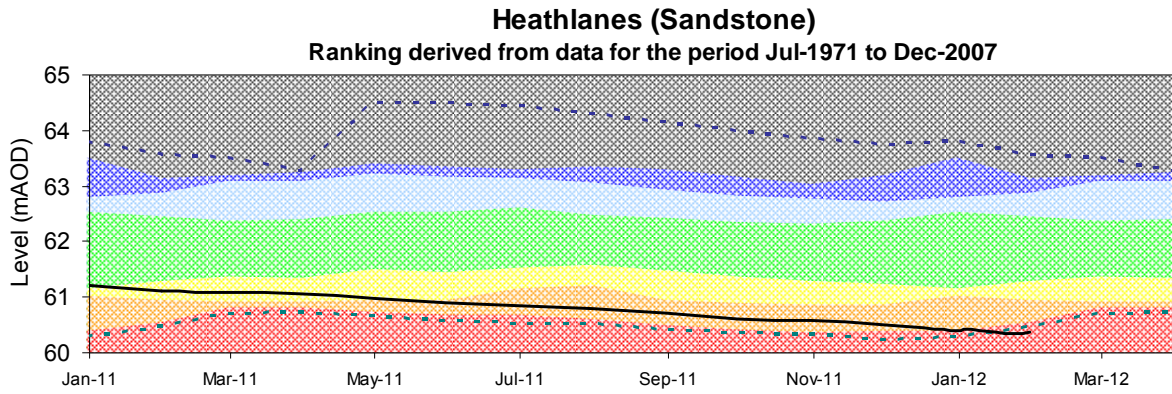
Dalton Holme (Chalk)
 Ranking derived from data for the period Jan-1900 to Dec-2007



	Exceptionally high		Notably high		Above normal		Normal
	Below normal		Notably low		Exceptionally low		
	Monthly maximum		Monthly minimum		Latest data		

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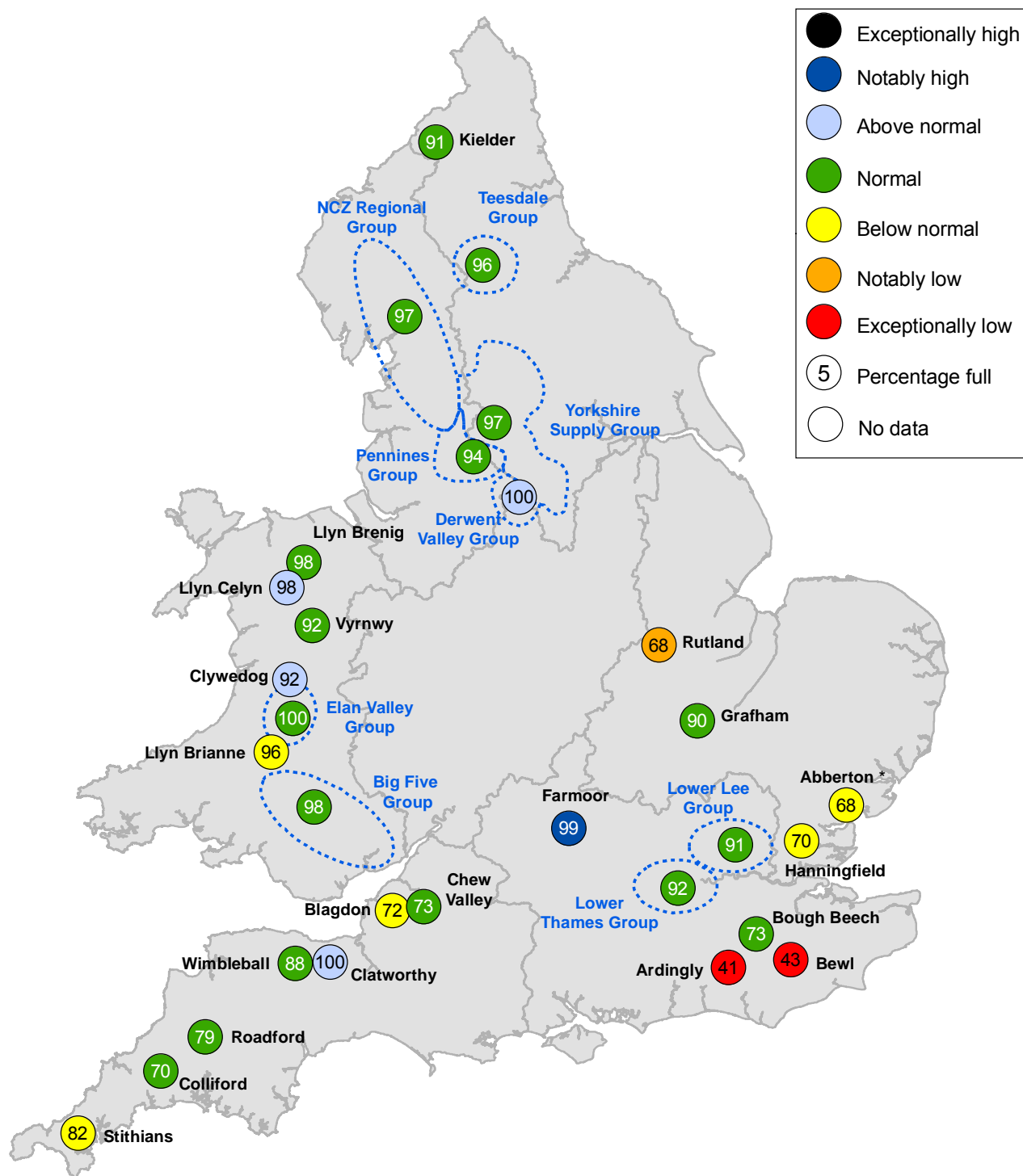
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	Exceptionally high		Notably high		Above normal		Normal
	Below normal		Notably low		Exceptionally low		
	Monthly maximum		Monthly minimum		Latest data		

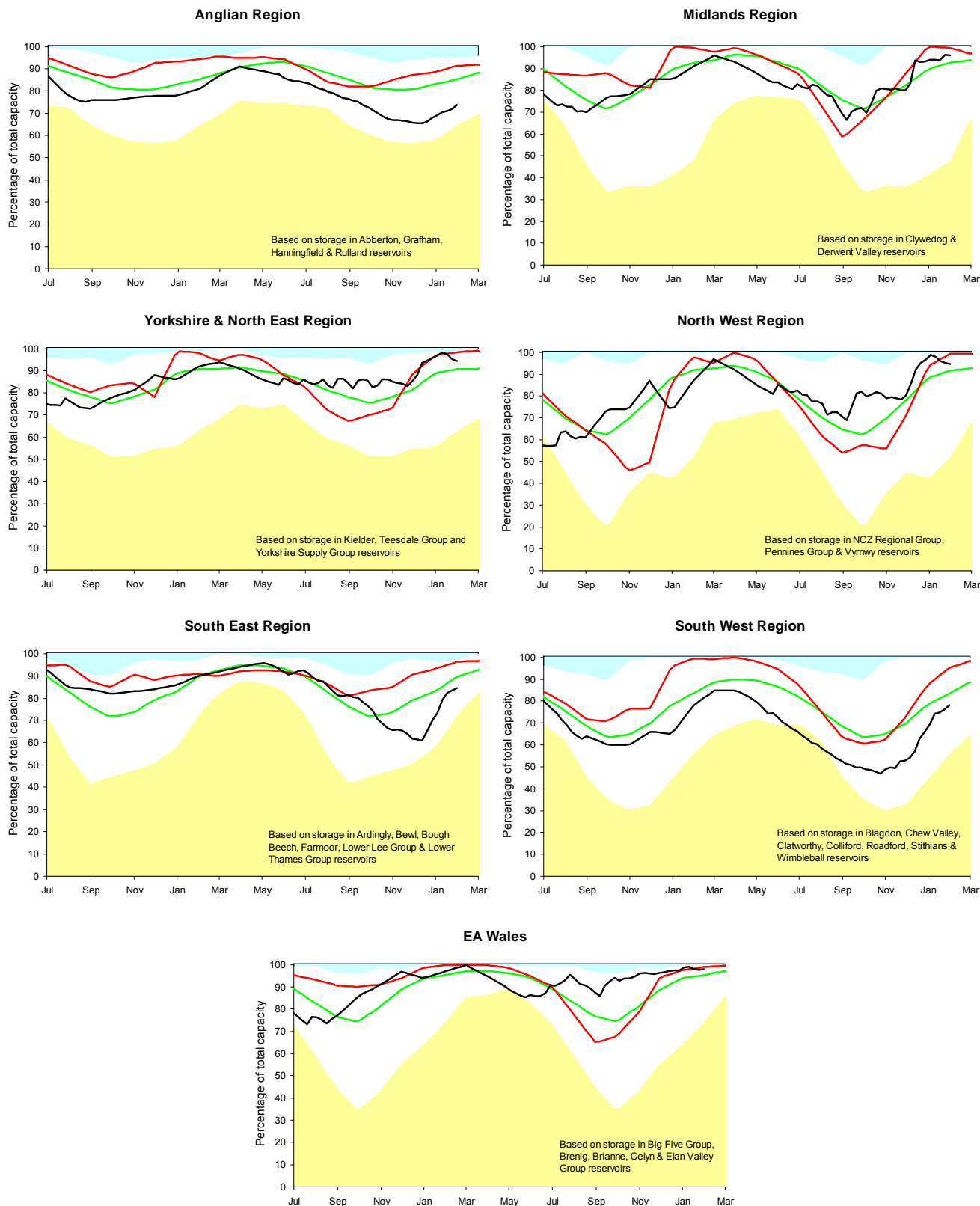
Figure 6: Index groundwater level sites for major aquifers for the past 13 months up to the 31 January or latest available data, compared to an analysis of historic groundwater levels and long term maximum and minimum levels (Source: Environment Agency)

Reservoir Stocks



* Storage at Abberton Reservoir in Anglian Region is affected by ongoing engineering works to increase capacity by 60% - works are expected to be complete by the end of 2013.

Figure 7: Reservoir stocks at key individual and groups of reservoirs for the week ending 31 January, as a percentage of total capacity and classed relative to an analysis of historic values for the same time of year (Source: Water Companies). Note: Classes shown may not necessarily relate to control curves or triggers for drought actions. As well as for public water supply, some reservoirs are drawn down to provide flood storage, river compensation flows or for reservoir safety inspections. In some cases current reservoir operating rules may differ from historic ones.



	Below minimum monthly level		Above maximum monthly level		Average		1993-1995		2010-2012
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Figure 8: Regional reservoir stocks for the past 18 months up to the 31 January, compared to long term maximum, minimum, average and 1993 – 1995 stocks (Source: Water Companies). Note: Historic records of individual reservoirs/reservoir groups making up the regional values vary in length.