

monthly water situation report

South East Region, North East Thames Area

Summary – April 2011

An exceptionally dry month has led to a decline in river flows across North East Thames Area. The clay and urban rivers of North London and the RBI catchments have been particularly affected, recording *exceptionally low* flows. Groundwater levels have begun to drop but remain *normal* across the majority of indicator sites in the Area.

Rainfall

With an average of only 4mm of rainfall recorded during April, it has been a notably dry start to the summer season. North East Thames Area (the Area) has experienced its 3rd driest April on record (1914-Present), with the Roding, North London and Lower Lee recording their lowest areal average rainfall on record. The Area has received only 7% of the long term average (LTA) rainfall for April.

Soil Moisture Deficit (SMD)/Recharge

The warm temperatures and little rainfall has driven the Area's end of April SMD to 69mm, much higher than the LTA total of 29mm. The largest SMD across the Area has been seen in the Lower Lee where it reached 74mm. With the minimal rainfall, no effective rainfall was available for recharge or river flow across the Area.

River Flows

All of our river flow indicator sites have fallen during April. Only the River Misbourne remains *normal* for the time of year. The urban and clay rivers of London and the RBI continue to decline with the Brent, Crane, Ingrebourne and Roding rivers recording *exceptionally low* flows for the time of year, and the first three recording the lowest monthly mean April flow ever recorded. All of our other indicator sites are currently *below normal* for the time of year. With the dry weather, there were no flood alerts or warnings issued in the Area during March.

Groundwater Levels

The majority of groundwater indicator site levels have begun to drop during April due to the limited winter recharge. Those still on the increase have slowed their rise. The indicator sites at Hixham Hall and Wapseys Wood are now at *below normal* levels, while all other indicator sites remain at *normal* levels for the time of year.

Environmental Impact

The table below shows the abstraction licence flow constraints that were in force in April, out of a Summer maximum of 21:

Week Commencing	4 April	11 April	18 April	26 April
Number of Constraints	0	1	1	1

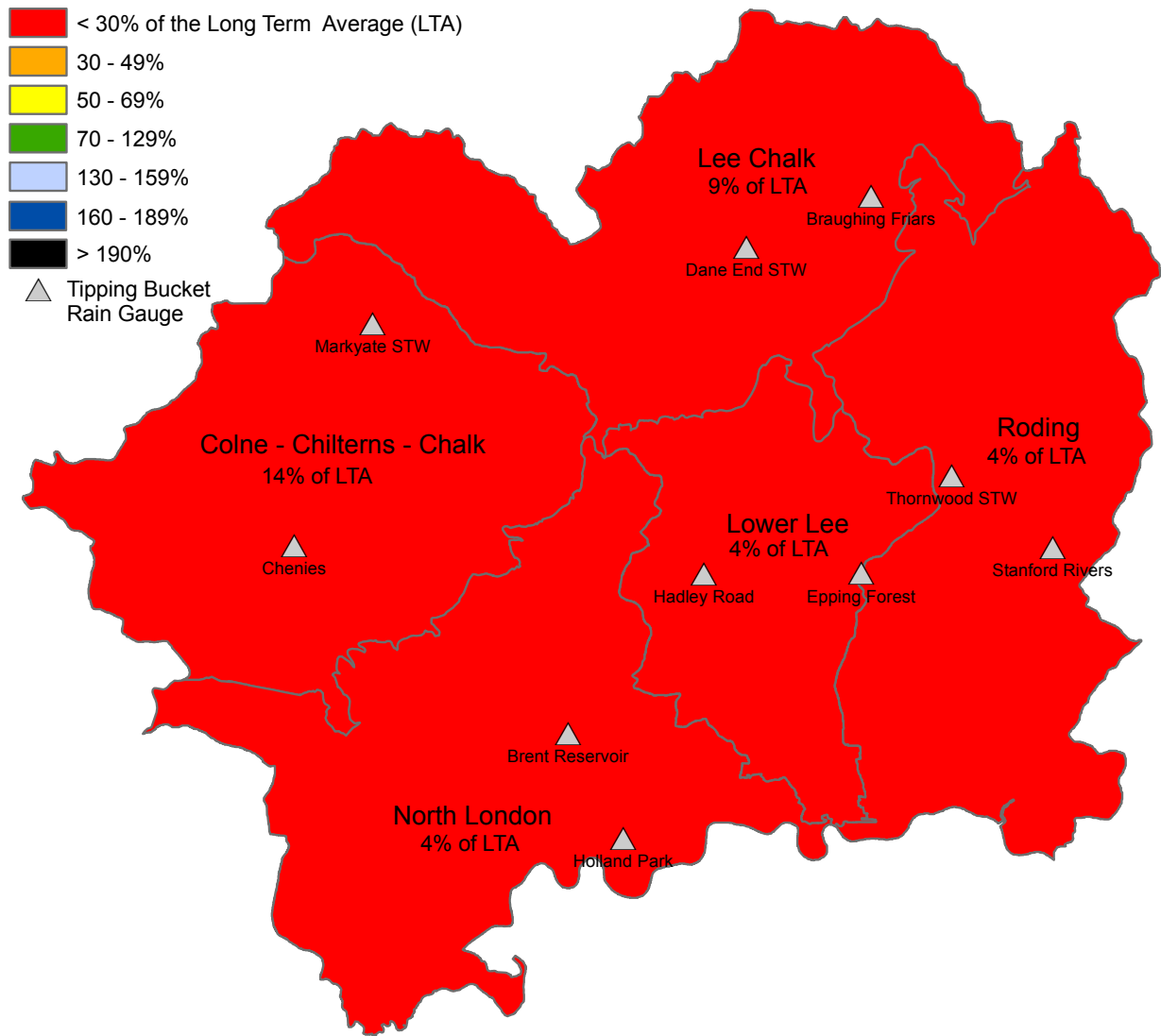
Sources

The chalk rivers of the Colne catchment have maintained their sources during April. Flows in the rivers Rib, Ash and Stort have all migrated significantly downstream. Notably, the River Misbourne continues to flow from its source at Deepmill Lane to its confluence with the River Colne.

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Rainfall Map

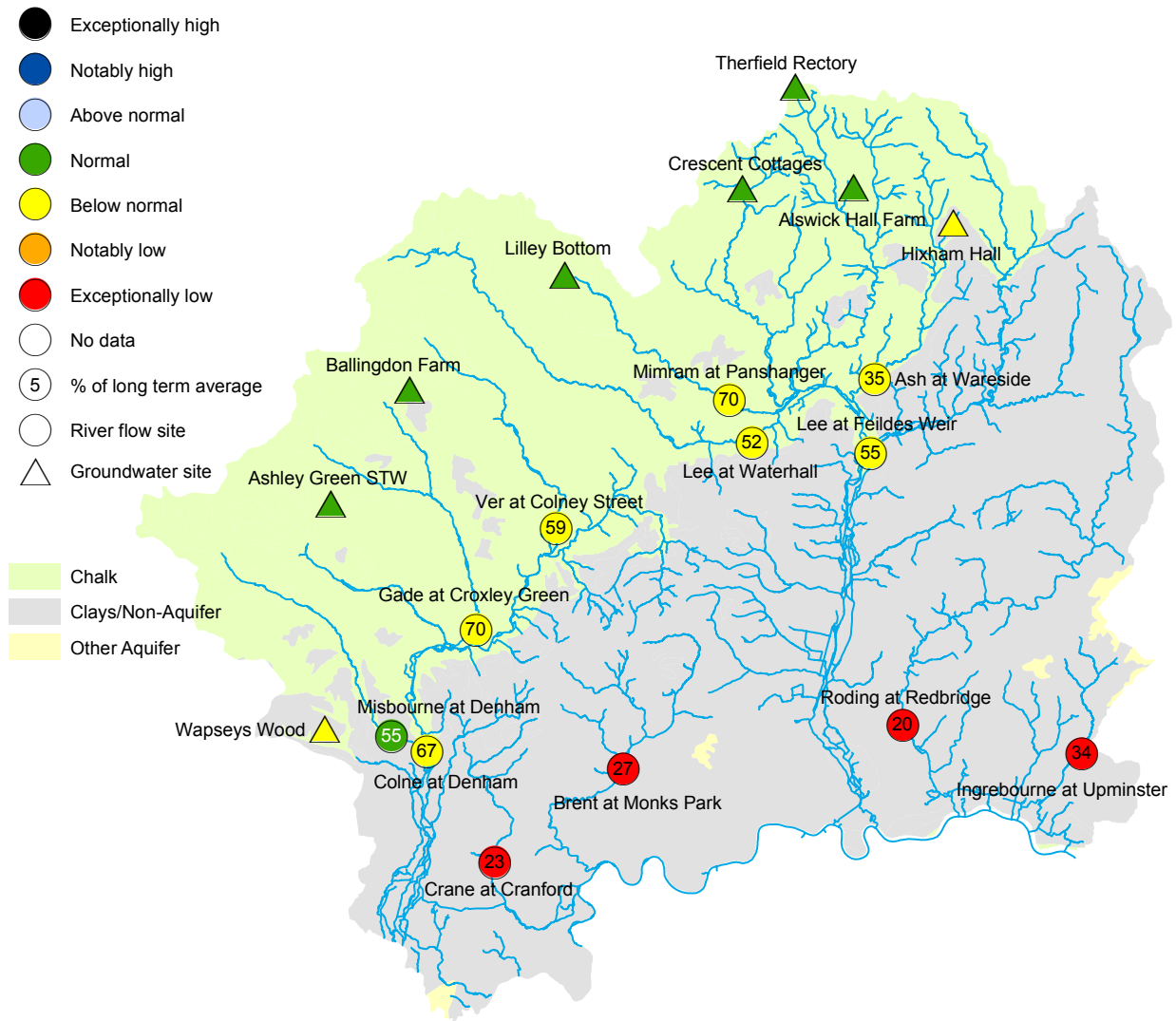


Data source: Rainfall calculated using Thames Soil Moisture Model.

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River Flow and Groundwater Map




Groundwater site status based on end of month level. Surface water site status based on mean monthly flow.


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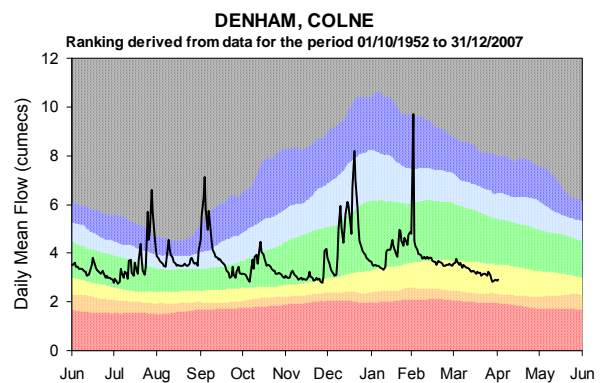
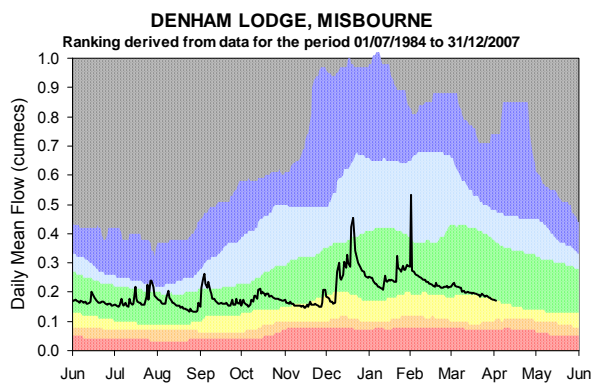
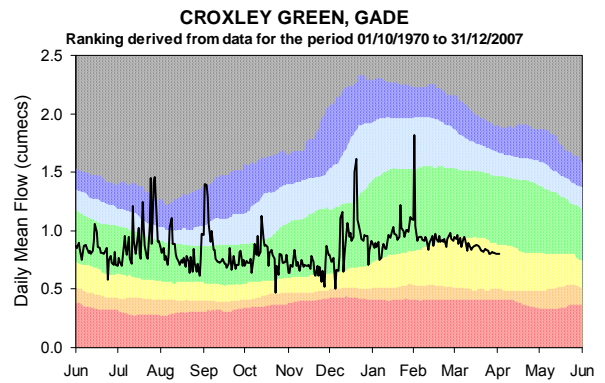
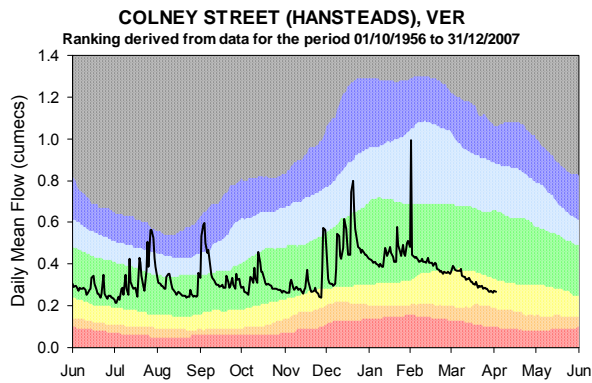
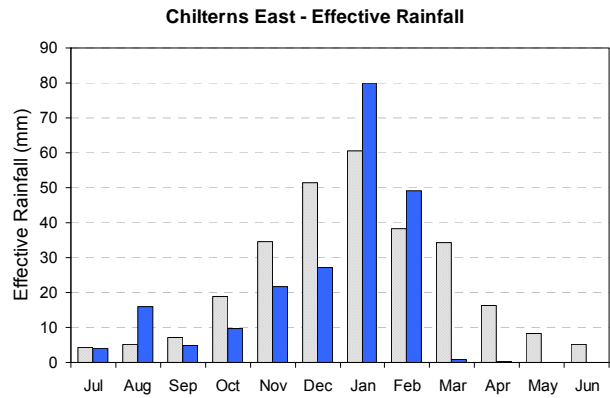
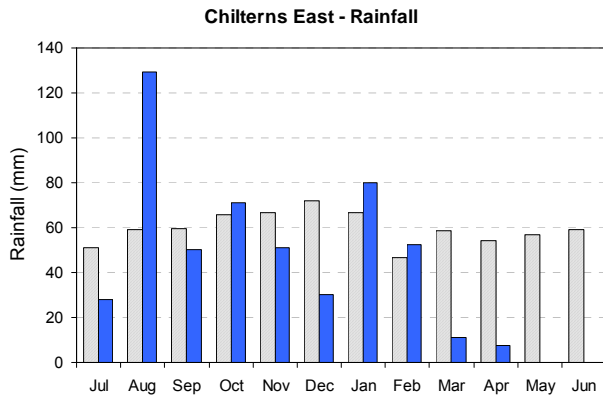
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
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
Colne



 Monthly total rainfall (mm)

 Long-term average rainfall (mm)



 Exceptionally high
 Below normal

 Notably high
 Notably low

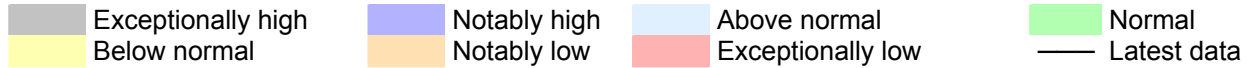
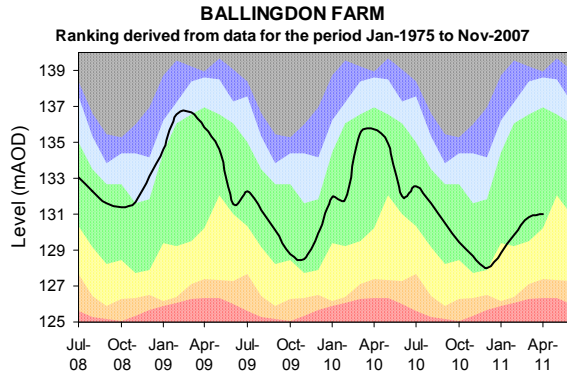
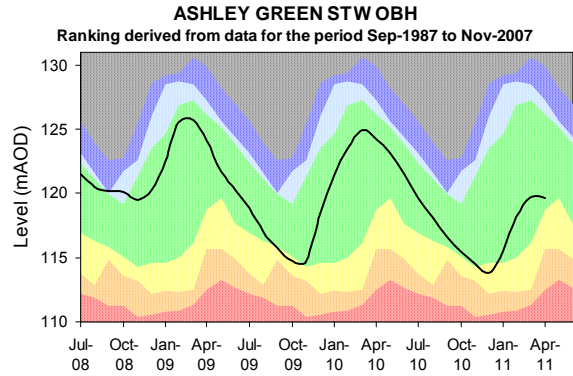
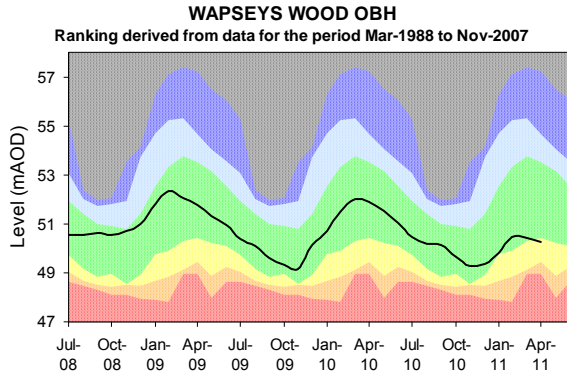
 Above normal
 Exceptionally low

 Normal
 Latest data

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Colne Groundwater



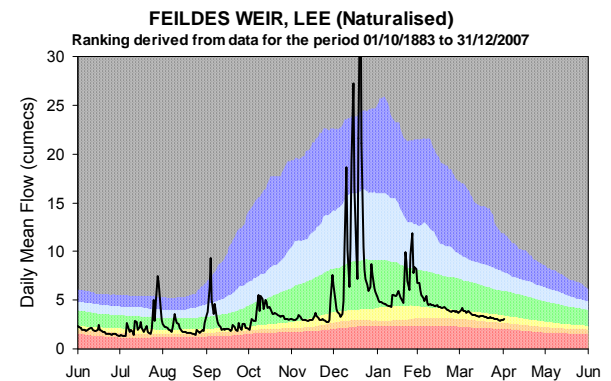
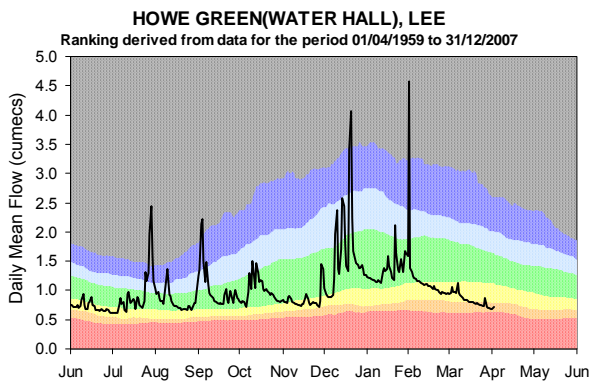
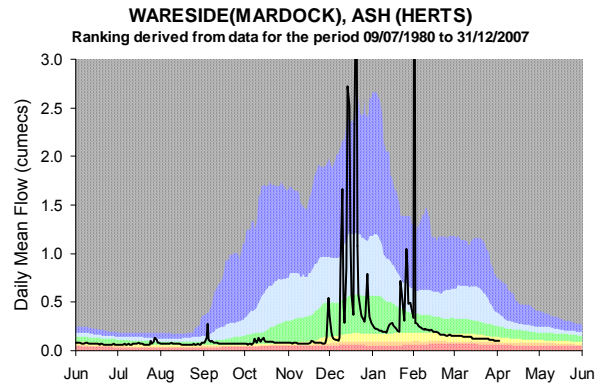
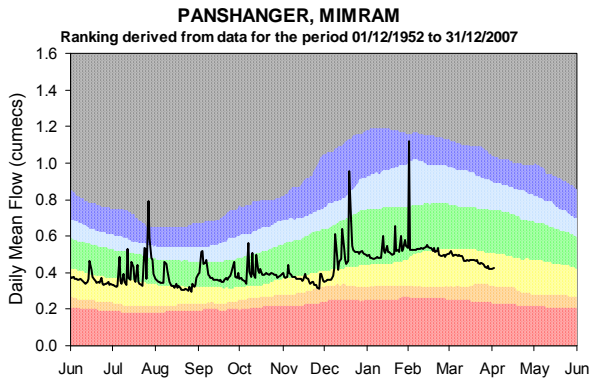
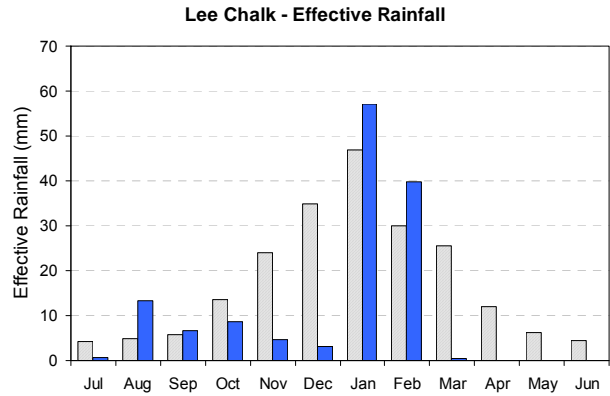
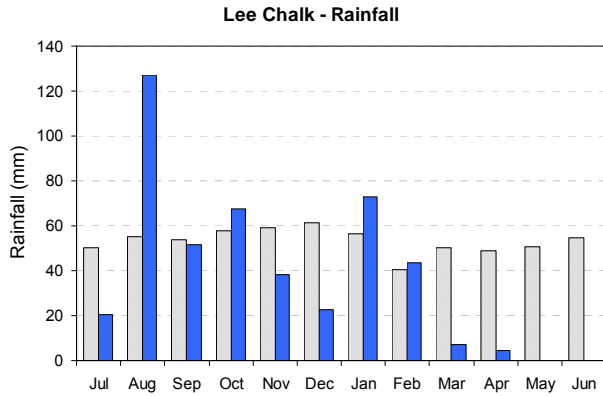
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Upper Lee

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
Below normal

Notably high
Notably low

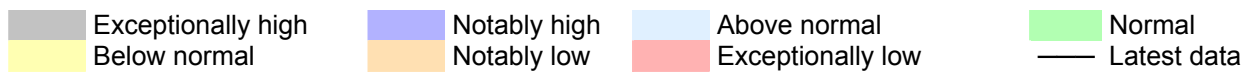
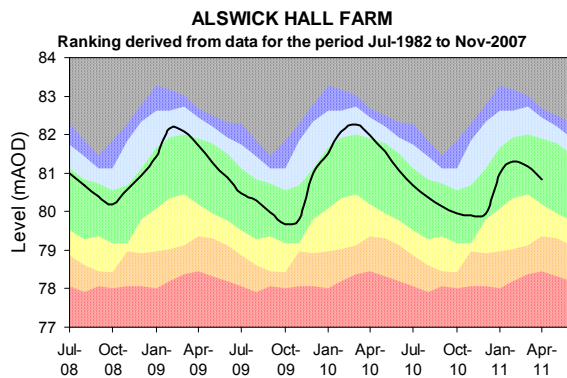
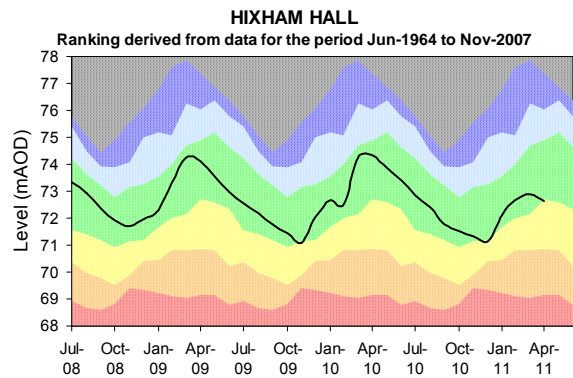
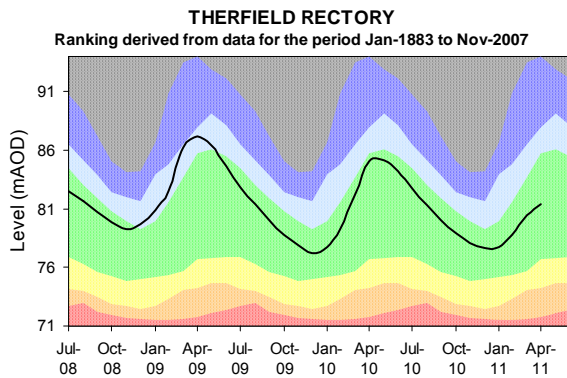
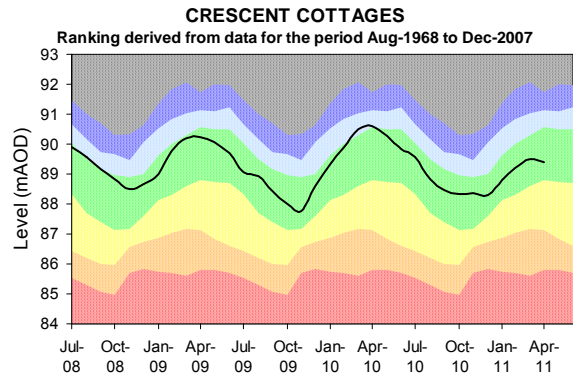
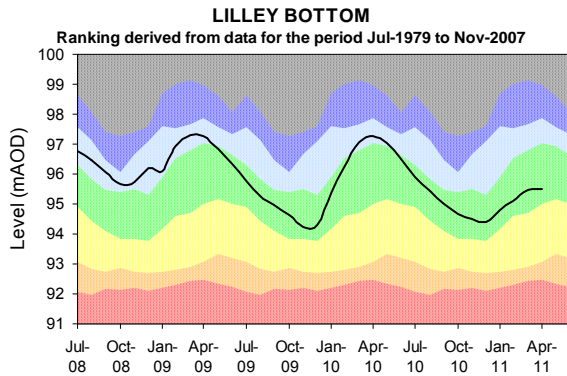
Above normal
Exceptionally low

Normal
— Latest data

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Upper Lee Groundwater



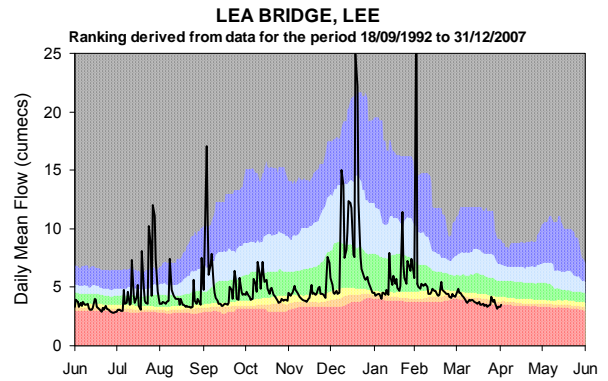
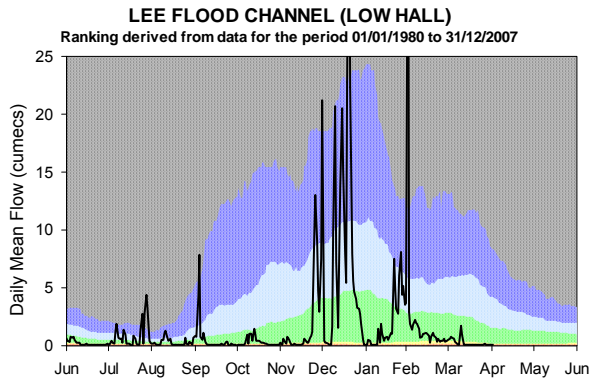
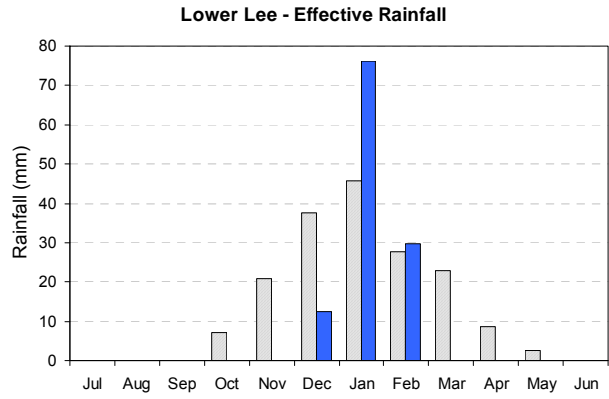
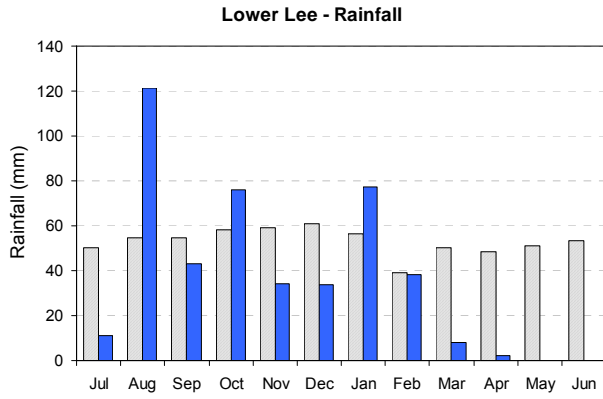
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Lower Lee

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
 Below normal

Notably high
 Notably low


Above normal
 Exceptionally low

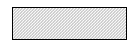
Normal
 Latest data

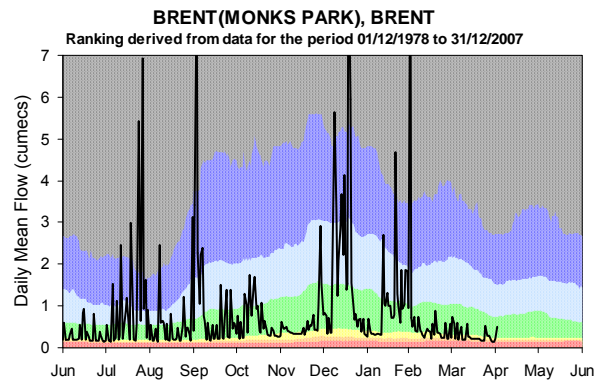
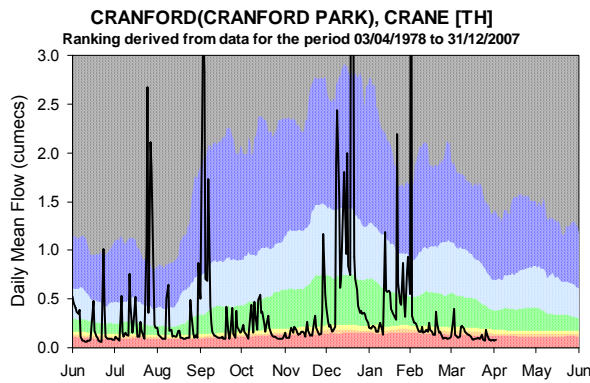
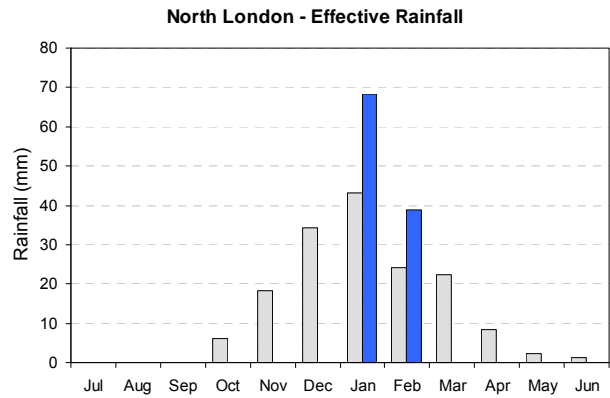
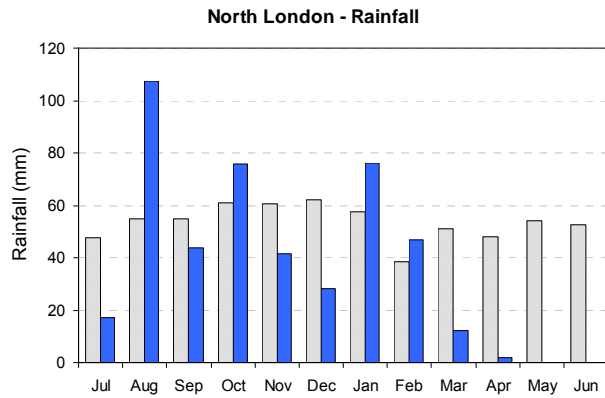
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

North London



 Monthly total rainfall (mm)

 Long-term average rainfall (mm)



 Exceptionally high
 Below normal

 Notably high
 Notably low

 Above normal
 Exceptionally low

 Normal
 Latest data

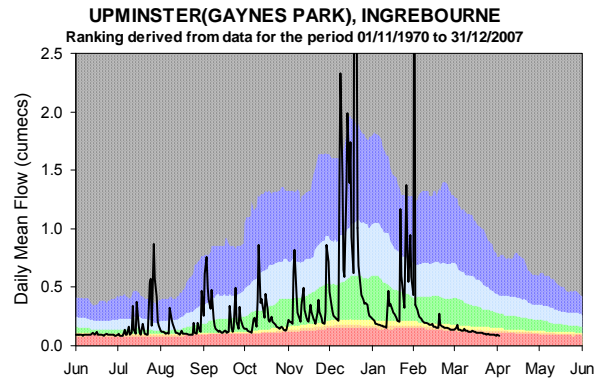
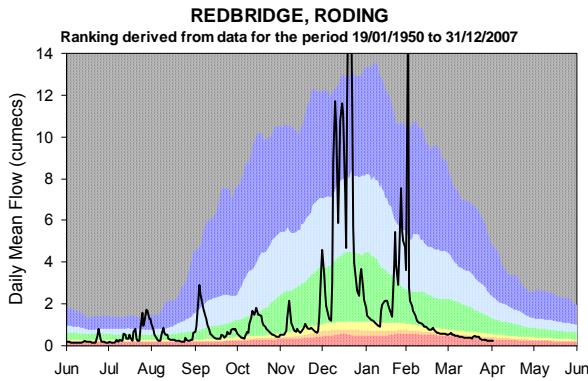
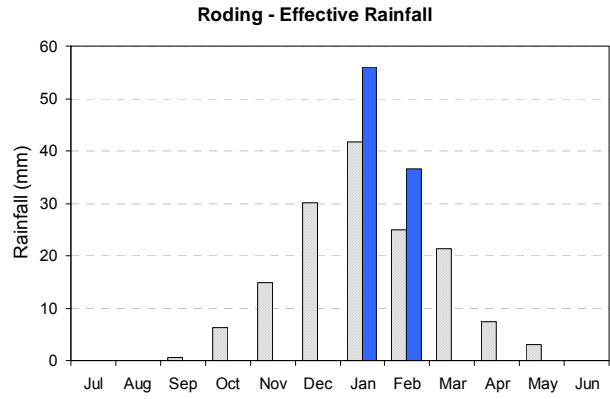
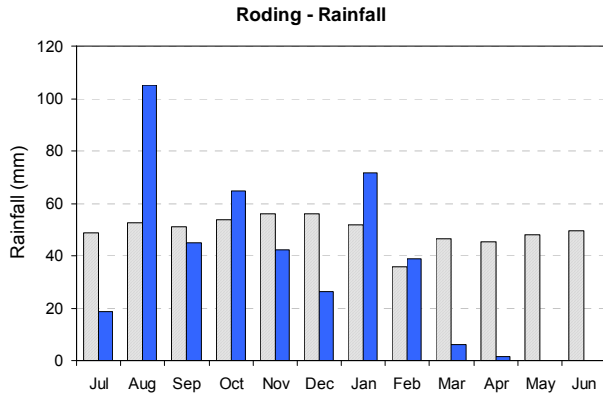
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Roding

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
 Below normal

Notably high
 Notably low

Above normal
 Exceptionally low

Normal
 Latest data

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Summary of rainfall, effective rainfall and soil moisture deficit

Rainfall and Effective Rainfall – April 2011

Area	Rainfall (mm)			Effective Rainfall (mm)		
	Total (mm)	LTA (mm)	% of LTA	Total (mm)	LTA (mm)	% of LTA
Chilterns- East - Colne	8	54	14	0	16	0
Lee - Chalk	4	49	9	0	12	0
North London	2	48	4	0	8	0
Lower Lee	2	48	4	0	9	0
Roding Catchment	2	45	4	0	7	0
North East Thames Area Average	4	49	7	0	10	0

Soil Moisture Deficit (SMD) - April 2011

Area	End of Month SMD (mm)	End of Month SMD LTA (mm)
Chilterns- East - Colne	63	25
Lee - Chalk	67	27
North London	72	33
Lower Lee	74	30
Roding Catchment	67	29
North East Thames Area Average	69	29

Rainfall and Effective Rainfall – Summer total for period 1 April to 30 April 2011

Area	Rainfall (mm)			Effective Rainfall (mm)		
	Total (mm)	LTA (mm)	% of LTA	Total (mm)	LTA (mm)	% of LTA
Chilterns- East - Colne	8	54	14	0	16	0
Lee - Chalk	4	49	9	0	12	0
North London	2	48	4	0	8	0
Lower Lee	2	48	4	0	9	0
Roding Catchment	2	45	4	0	7	0
North East Thames Area Average	4	49	7	0	10	0

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Glossary

Term

Aquifer

Areal average rainfall

Effective rainfall

Groundwater

Recharge

Reservoir live capacity

Soil moisture deficit (SMD)

Definition

A geological formation able to store and transmit water.

The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).

The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).

The water found in an aquifer

The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).

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.

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

Notably high

Above normal

Normal

Below normal

Notably low

Exceptionally low

Value likely to fall within this band 5% of the time

Value likely to fall within this band 8% of the time

Value likely to fall within this band 15% of the time

Value likely to fall within this band 44% of the time

Value likely to fall within this band 15% of the time

Value likely to fall within this band 8% of the time

Value likely to fall within this band 5% of the time

Units

cumecs

mAOD

Cubic metres per second ($\text{m}^3 \text{s}^{-1}$)

Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).