Photos of Belmont reservoir taken on 17 July 2025

STATEMENT IN SUPPORT OF AN APPLICATION FOR A

DROUGHT ORDER UNDER THE WATER RESOURCES ACT 1991

(AS AMENDED BY ENVIRONMENT ACT 1995)

July 2025

Version: 1

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

Published by:

Environment Agency
Horizon House, Deanery Road,
Bristol BS1 5AH

www.gov.uk/environment-agency

Further copies of this report are available from our publications catalogue: www.gov.uk/government/publications or our National Customer Contact Centre: 03708 506 506

Email: enquiries@environment-agency.gov.uk

Contents

1. Executive summary

This statement is to support an application by the Environment Agency to Defra for a drought order to allow the compensation flow release from Belmont reservoir (near Bolton, Lancashire) to the downstream river (Eagley Brook) to be reduced from 9 million litres per day (Ml/d1) to 4.5 Ml/d. This is needed due to an exceptional shortage of rain resulting in very low storage in Belmont reservoir.

2. Introduction

As the licensed water undertaker supplying North West England, United Utilities Water Limited (UU), are the owner and operator of Belmont reservoir near Bolton, Lancashire.

Compensation flows are minimum flow requirements, set out in licences (or other legal documents) that the Environment Agency grants and regulates. The term compensation comes from when the existing watercourses were dammed to create a reservoir; a compensation flow then had to be released from the reservoir to compensate downstream users and the environment for the impact of the impoundment and/or abstraction. Belmont reservoir is known as a Compensation Only Reservoir, or CoR. This is because there is no abstraction of water from it for public water supply – its purpose is purely to provide a release of water (i.e. a compensation flow) to the downstream watercourse, Eagley Brook, for environmental protection. Belmont reservoir is not listed as a source of supply in UU Water Resources Management Plan nor as a drought source in the Drought Plan.

As a water company, UU cannot apply for drought powers for CoRs as they are not connected to the public water supply system. Instead, the Environment Agency apply for a drought order to Defra. The Environment Agency are applying for a drought order under Section 73(1)(b) of the Water Resources Act 1991 (as amended by the Environment Act 1995) to vary the conditions of UU impoundment licence number NW/069/0003/001 to reduce the compensation flow release required from Belmont reservoir to the downstream watercourse, Eagley Brook, from 9 million litres per day (Ml/d) to 4.5 Ml/d as it is perceived that:

- There exists, or is threatened, a deficiency in the flow or level of water in an inland water which poses a serious threat to flora or fauna which are dependent on those waters and;
- The reason for the deficiency is an exceptional shortage of rain.

The drought order, if granted, will ensure that compensation water continues to provide a flow for the downstream river environment whilst preserving water stored in the reservoir itself, whilst the drought order is in place.

This application is necessary due to an exceptional shortage of rainfall since February 2025, which has resulted in very low storage in Belmont reservoir. Its current (as of 11

August) storage is 31.56% net[2] full. The drought triggers set for Belmont reservoir in UU drought plan[3] were reached on:

- Trigger 1: 66.63% storage. Crossed on 5 May 2025
- Trigger 2: 49.94% storage. Crossed 30 June 2025
- Trigger 3: 33.26% storage. Crossed 4 August 2025

UU have commenced the actions associated with the above drought triggers as set out in their drought plan.

Forecasting indicates that the remaining drought trigger will be hit at Belmont on the following date although this may vary depending on inflows and outflows:

- Trigger 4: 14.67% storage. Yet to be crossed. Forecast date of 13 September 2025 (inflows modelled) or 8 September assuming minimum historic inflows (a repeat of the worst drought on record).

If granted, it is expected that the drought order will be implemented at trigger 4. Without a drought order in place, Belmont is forecasted to hit dead water on around the 15 October 2025.

Drought powers have never previously been applied for at Belmont. This is because, prior to the impoundment licence issued in 2010, UU were able to reduce the compensation flow without a drought permit/order as the original Act of Parliament (The Bolton Improvement Act 1854) allowed this to happen. The impoundment licence superseded the previous compensation flow set in the 1854 Act therefore a drought order is needed to reduce the compensation flow. Reductions in Belmont's compensation flow occurred in 1990/91; 1994; 1995/96 and 1999. The lowest flow in Eagley Brook on these occasions was 6 Ml/d. Drought orders are a precaution against a worsening situation. Due to the time involved in the application, public inspection and determination period, drought orders are often applied for but not implemented due to rain arriving in the meantime.

There is a risk that storage in Belmont reservoir will continue to decline if it remains dry and there is a risk that it may not refill if autumn/winter rainfall is insufficient. The potential for a drought order at Belmont reservoir is included within UU drought plan. Drought orders have a duration of 6 months; however, if storage in Belmont reservoir improves, the drought powers may be lifted earlier.

The area affected by the drought order is the watercourse downstream of Belmont reservoir. The environmental impacts of the drought order, including the area impacted, are described further in Section 9 of this document and the accompanying Environmental Assessment Report.

3. Belmont Reservoir

Belmont reservoir is located to the north of the village of Belmont, near Bolton in Lancashire (see Figure 1). The reservoir was constructed in 1826 and it is used for sailing by Bolton Sailing Club. An island in Belmont reservoir is home to one of the UK's largest colonies of black-headed gulls.

The outflow (compensation flow release) from Belmont reservoir enters the downstream watercourse, Eagley Brook (waterbody ID GB112069064570). After around 4 km, Delph Brook joins Eagley Brook – Delph Brook flows from Delph reservoir (also owned by UU). Then Eagley Brook joins Astley Brook to form the River Tonge at "Meeting of the Waters" to the north of Bolton. Just to the east of Bolton, Bradshaw Brook (which flows from Jumbles reservoir, also owned by UU joins the River Tonge. A little further, the River Tonge joins the River Croal.

Belmont reservoir is within the West Pennine Moors SSSI (site of special scientific interest) and is a local Biological Heritage Site.

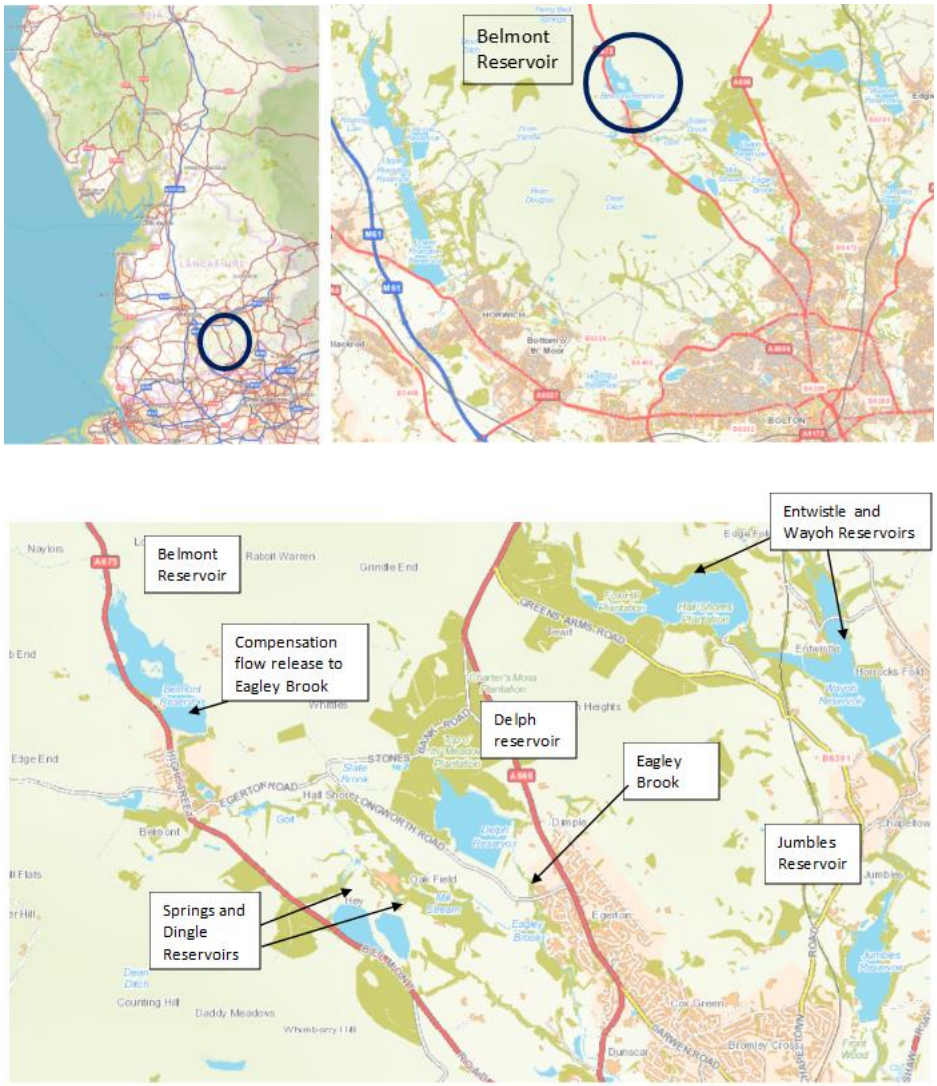
There is no connection between Belmont reservoir and other UU nearby reservoirs (see Figure 1).

There is no abstraction for public water supply from Belmont reservoir and there is no associated abstraction licence. Its only purpose is to provide a flow to the downstream watercourse. The requirement to provide this flow is set in Condition 3.3. of Belmont's impoundment licence:

> 3.3 At all times during the life of the impounding works authorised by this licence, water shall be released from the reservoir, created by the works so as to maintain a flow of 105 litres per second (9 megalitres per day) in the Eagley Brook at National Grid Reference SD 67389 16293 shown marked as "Compensation flow measurement point" on the map. This flow shall be known as the Compensation Flow.

An impoundment licence sets requirements and conditions that govern the construction and operation of a reservoir.

Figure 1 Belmont location map



4. Scope of the proposed drought order

In order to continue to supply water to the watercourse, Eagley Brook, downstream of Belmont reservoir, the Environment Agency are applying for a drought order to temporarily vary Condition 3.3 in the associated impoundment licence to reduce the compensation flow release from the reservoir to Eagley Brook. If granted, the drought order would:

- Reduce the compensation flow release from 9 Ml/d (9,000 cubic metres per day) to 4.5 Ml/d (4,500 cubic metres per day)

The drought order, if granted, will ensure that compensation water continues to provide a flow for the downstream environment whilst preserving storage in the reservoir itself whilst the drought order is in place.

If granted, the drought order would be in force for up to 6 months, potentially starting in August 2025, however if the water resource situation improves the drought powers may be lifted earlier.

Without these powers, there is a risk that the remaining water stored in Belmont reservoir will be exhausted meaning that it will not be possible to provide a compensation flow release to Eagley Brook.

Following a drought event, a joint post incident review involving both UU and the Environment Agency will ensure we capture and learn any lessons associated with CoRs. Trigger levels will be re-assessed if our understanding of the risk level changes and will be updated if required.

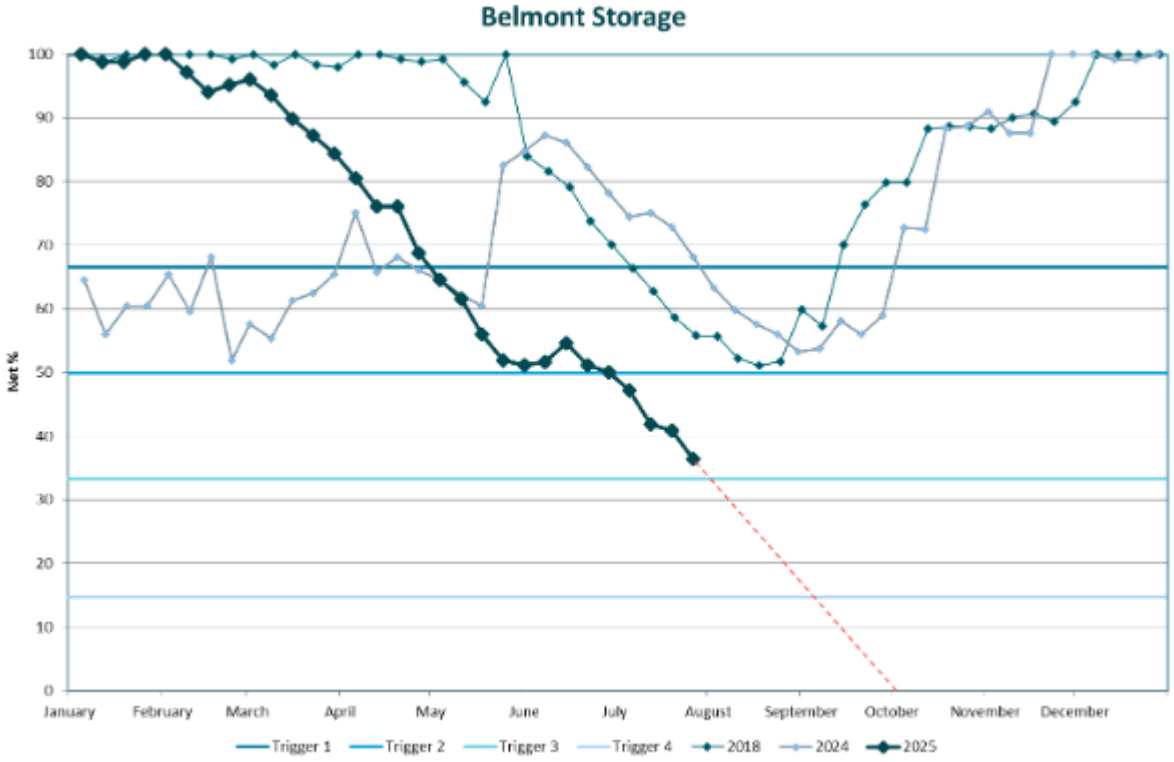
5. Current water resource situation

Figure 2 shows the storage in Belmont reservoir for this year (2025), last year (2024) and a recent dry year (2018). It also shows the drought trigger levels (1 to 4).

Figure 2 shows that Belmont reservoir was full on the 31 January 2025 and it is since then that the dry weather has resulted in reduced reservoir storage. The reservoir is currently 31.56% net full (as of 11 August 2025). The dotted line shows a forecast of reservoir storage if the decline continues at the same rate seen recently – this suggests that the reservoir could hit dead water around the 15 October 2025. Dead water is the water at the bottom of a reservoir that is not normally utilised.

At Belmont reservoir, the volume of dead water is 214 Ml in total; the total maximum gross storage of the reservoir is 2,142 Ml so dead water only represents 10% of the gross capacity. Therefore, once it hits 0% net storage, forecast to be around the 15 October 2025, there will be very little water left in the reservoir; only 214 Ml which is sufficient to provide the compensation flow release of 9 Ml/d for 23 days.

Figure 2: Belmont reservoir storage (forecast shown by red dashed line)



UU carry out continuous hydrological and hydrogeological monitoring, in conjunction with the Environment Agency, to closely monitor water resources. A weekly Water Update is sent to the Environment Agency which contains detailed information on UU reservoir levels, reservoir volumes and abstraction rates for all sources of water across the whole region. This data includes Belmont reservoir. A summary of the current water resources situation is available on the UU website for the public to view (http://www.unitedutilities.com/north-west-reservoir-levels.aspx) and this is updated weekly once the Water Update is completed. These assessments also provide the basis for identifying the need and timing of drought alleviation measures as set out in UU drought plan.

UU carefully manage outages at reservoirs to protect water storage however reservoir drawdowns are needed to allow essential maintenance and reservoir safety works to go ahead. There have been no such drawdowns at Belmont reservoir recently.

6. Drought management

UU drought plan sets out the actions associated with drought triggers at CoRs (https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/final-drought-plan-2022/g-compensation-only-reservoirs.pdf) and this information is replicated in Figure 3 below.

Figure 3: Drought trigger actions for compensation only reservoirs (CoRs)

Trigger	Action	Timing	Evidence that drought plan followed
1 (66.63% net storage)	• Increase in monitoring of the reservoir level • Confirm compensation release through gauging and adjust if necessary • Assess rate and reason for reduction in storage	Crossed on 5 May 2025	• Reservoir level readings recorded on UU's corporate system at least 3 times per week • Independent consultants have completed a check gauging of the compensation flow release • Assessment of rate of storage reduction undertaken
2 (49.94% net storage)	• Forecast potential need for a drought order • Liaise with Environment Agency (EA) and Natural England (NE) • Review requirement for environmental monitoring	Crossed 30 June 2025	• Potential for drought order application flagged through routine water resource reporting • Reservoir storage data shared with EA through routine weekly updates • EA informed of potential drought order application at Belmont on 25 June 2025. NE also contacted • No pre-drought order implementation environmental monitoring identified
3 (33.26% net storage)	• Depending on the forecast, start application for a drought order • Undertake environmental monitoring and actions (e.g. fish rescue) if required • Produce contingency plan	Crossed on 04 August 2025	• We began to prepare a drought order application on the 25 June 2025, ahead of crossing Trigger 2 • This information was then updated 18 July 2025 following request from EA on 15 July 2025 • If required, environmental monitoring and mitigation actions will be undertaken • Contingency plan developed. No viable options to support Belmont's compensation flow identified.
4 (14.67% net storage)	• Implement drought order[4]	Yet to be crossed. Forecast of 13 September 2025	• These actions will be undertaken on reaching Trigger 4. • Implementation of the drought order is dependent on it being granted by Defra

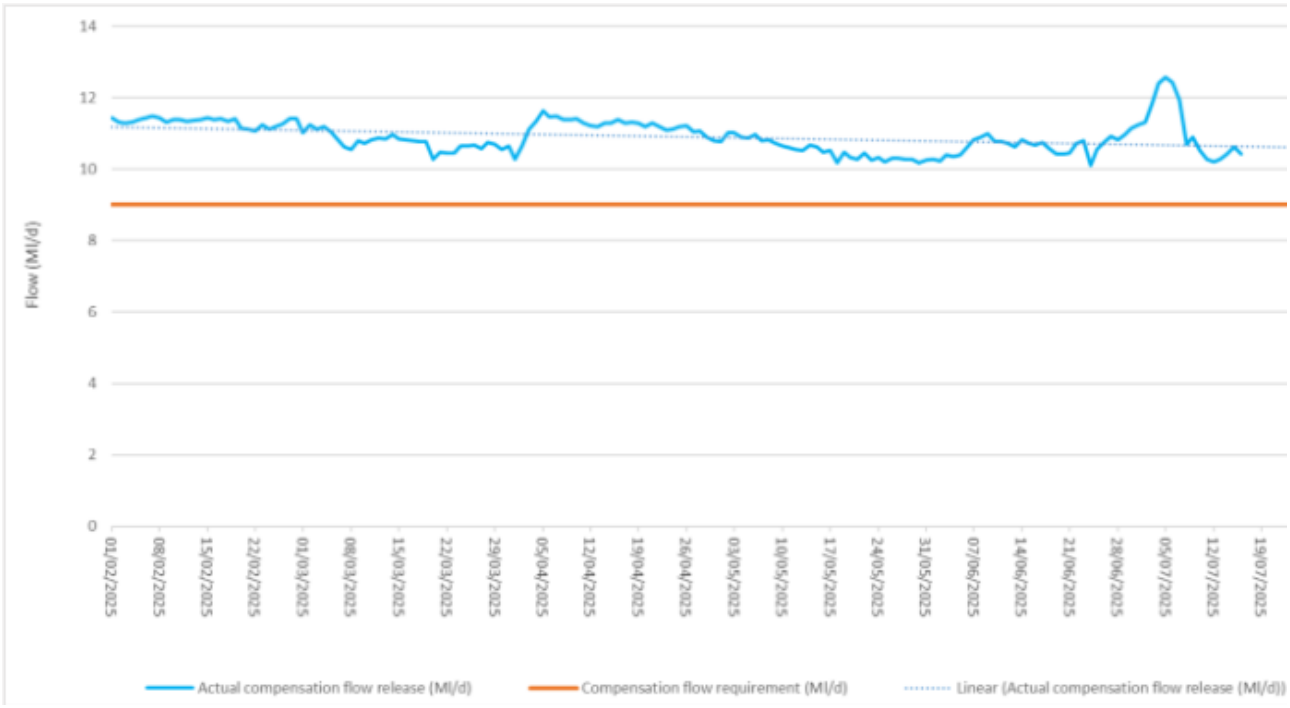
	• Review contingency plan in case of reaching dead water		
Dead water (0% net storage)	Undertake contingency plan	Yet to be crossed. Forecast of 15 October 2025	• This action will be undertaken on reaching dead water

A key activity for CoRs is to manage their compensation flow release. Compensation flows are minimum flow requirements and if UU under-release the Environment Agency will take enforcement action for not complying with the abstraction licence. Therefore, it is normal practice for UU to over-release to avoid a compliance breach, however the over-release needs to be managed to minimise it as far as it is practical making this a difficult balance to achieve in practice. Figure 4 shows the compensation flow release from Belmont reservoir since the 1 February 2025 (the reservoir was last full on the 31 January 2025). It shows how UU have controlled the compensation flow release to the minimum flow requirement of 9 Ml/d. The downward linear trend line shows that management of the release has improved over time.

Up til July, the compensation release was controlled by a large 1800s valve which was located in a confined space. Minor adjustments to the valve could result in a large change in flow which had to be monitored for a period of time before further adjustments can be made. The flow rate also fluctuates dependant on head pressure from the reservoir and can drop suddenly. UU release above the minimum flow required (9 Ml/d) in order to prevent under compensating (which is a prosecutable offence). UU undertake daily visits to control the release as closely as possible within the constraints of the infrastructure present. In July 2025 UU replaced the compensation valve and extend the spindle to allow them to adjust the valve outside of the confined space and provide greater control of the release. This amendment to the infrastructure is reflected in the closer control of the compensation flow.

UU have made adjustments to the flow meter, installed a new gauge board with red marker based on the most recent weir survey and completed gauging downstream of the release to compare flows against the board and meter. UU are also undertaking further work on the ultrasonic instrument to ensure it is accessible to use as a datum plate for verification.

Figure 4: Belmont compensation flow record



7. Case for an exceptional shortage of rain

Belmont reservoir was last full on the 31 January 2025. However, below normal rainfall and above normal soil moisture deficits since February 2025 have led to depleted water storage. On the 11 August 2025, Belmont reservoir was 31.56% net full. If the dry weather persists over the coming months, there is a risk that reservoir levels will get exceptionally low during summer 2025. There is also a risk that refill of reservoir storage over the autumn/winter of 2025/26 will be inadequate to allow the reservoir to refill ready for next spring/summer.

As evidence of the need for a drought order at Belmont reservoir, an Exceptional Shortage of Rain (ESoR) assessment has been undertaken by UU. UU's approach to the ESoR assessment is aligned to the Environment Agency's guidance (March 2025) and is set out in their Drought Plan (see section 5 in this document: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/final-drought-plan-2022/d-supply-side-options-and-permits.pdf).

Rainfall

Areal rainfall data for this assessment was provided by the Environment Agency from January 1871 to 22nd July 2025. The dataset is comprised of Met Office gridded rainfall (HadUK) data which is validated from January 1871 to September 2023 and Environment Agency Daily Rainfall Tool (DRT) data from October 2023 to July 2025. Areal rainfall data offers a reliable and representative measure of rainfall by averaging data from multiple gauges, reducing uncertainty and aligning with legislative requirements. Data for the 23rd-

31st July 2025 is forecast rainfall data for Adlington, the Met Office's closest forecast location to Belmont (8.22 km away). This has enabled the full month of July 2025 to be included in the analysis.

Period of analysis

The period of analysis used for this assessment is February 2025 to July 2025. The start of the period of analysis commences when the rainfall is lower than normal (based on Cunnane analysis, see Figure 7). The end date of the period of analysis in this assessment is defined by the latest available areal rainfall data at the point of the application (22nd July) but has been extended to the end of July 2025 using Met Office weather forecast data.

Geographical extent of analysis

Areal rainfall data (HadUK/DRT) was provided by the Environment Agency for a catchment area bespoke to the Belmont reservoirs. The catchment area has one or more Met Office registered rain gauges and an area greater than 10 km^2, satisfying the Environment Agency's hydrological guidance for the assessment of an ESoR.

Technical rainfall analysis methods

The assessment uses the following technical analysis methods:

- Long-term average rainfall
- Cunnane analysis
- Standard Precipitation Index (SPI)

Long term average rainfall

Areal rainfall for the Belmont catchment in 2025 reveals a substantial deficit in precipitation compared to the 1991-2020 long-term average (LTA). January 2025 received slightly above normal with 101.8% LTA; however, February 2025 received 45.6% LTA and marks the start of four consecutive months of below LTA rainfall. March 2025 received 31.1% LTA, April 2025 received 28.8% LTA, May 2025 received 71.8% LTA, June 2025 reached 109.2% LTA. With areal rainfall data and Met Office forecast data used to complete the month of July, July receives 62.7% LTA (Figure 5). As a result, total rainfall for February to July 2025 was 58.7% LTA, 239.2mm below the LTA (Figure 6).

Figure 5: 2025 monthly Belmont rainfall as a percentage of LTA (1991-2020)

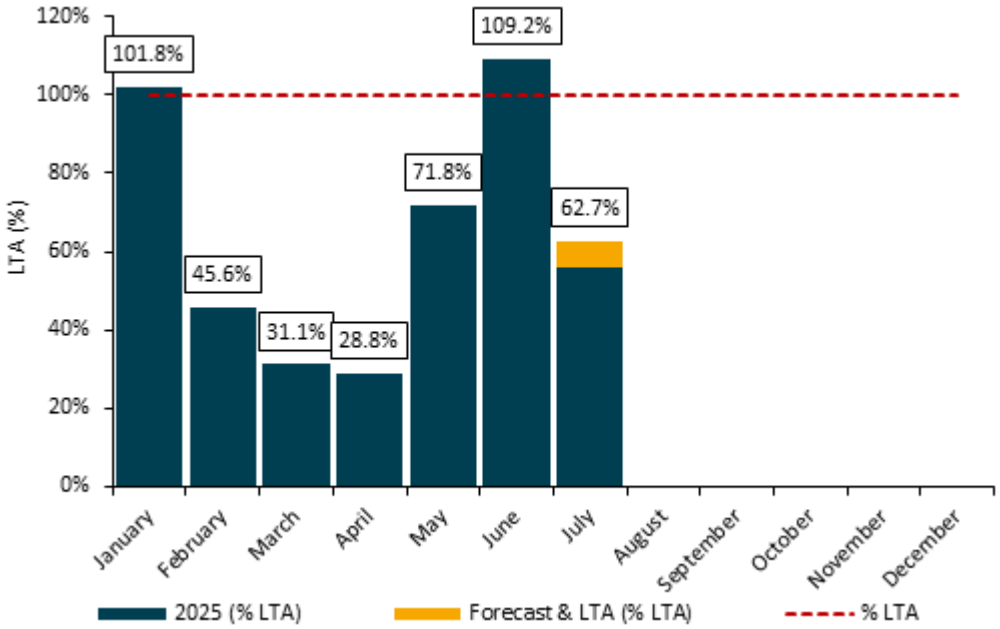


Figure 6: 2025 monthly and cumulative Belmont rainfall as a percentage of LTA (1991-2020)

	Duration (Months)											
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
January	101.8	116.3	104.8	100.7	108.6	103.8	101.8	99.6	104.7	108.5	109.9	114.3
February	45.6	75.4	96.1	92.3	91.5	99.6	96.6	95.5	94.1	99	102.8	104.5
March	31.1	39	63	83.6	83.2	84.1	92.3	90.4	90	89.1	94	97.9
April	28.8	30.1	36.2	56.4	75.9	77.1	78.9	87.1	85.8	85.9	85.3	90.2
May	71.8	50.7	43.5	44.2	59	75.4	76.5	78.3	85.9	84.8	84.9	84.5
June	109.2	92	72.7	61.7	57.8	67.2	79.8	80.1	81.2	87.9	86.7	86.7
July	62.7	85.3	81.4	69.8	61.9	58.7	66.6	77.8	78.3	79.5	85.8	84.9

Cunnane analysis

Cunnane analysis was used to assign plotting positions to Belmont areal rainfall data and produce an unbiased estimate of the probability of 2025 rainfall. Figure 7 shows the rank of 2025 rainfall for the Belmont catchment in the 155-year record and the respective plotting positions. Cells are shaded to indicate how the 2025 rainfall is classified according to the Cunnane plotting position with those in red classified as “exceptionally low” rainfall.

Figure 7 shows the severity of dry conditions across various time spans. March and April 2025 rank as the 10th and 9th driest individual months in 155 years, respectively. Dry conditions intensify when looking at longer durations. The 2-month period March to April was the 2nd driest on record. The 3-month periods March to May and February to April were the 4th and 2nd driest, respectively and were all classified as “exceptionally low”. In addition, March to July, ranks as the 5th driest on record and the period of analysis (February to July) ranks the 4th driest, both classified as “exceptionally low” according to the Cunnane plotting position (Figure 7). Although January individually is not categorised as below normal by the Cunnane metric, the 7-month period of January to July was the 4th driest start to a year on record, also classified as an “exceptionally low” period.

Figure 7: 2025 Belmont rainfall ranking out of 155 years of record (top), Cunnane plotting position (middle) and Cunnane classification table (bottom)

	Duration (Months)											
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
January	86	121	111.5	104.5	117	104	92	95	105	122	125	137
February	34	55	97	88	80	100	88	79	76	91	111	114
March	10	7	18	59	52	47	82	59	60	54.5	74	94
April	9	2	2	5	39	36	31	57	45	42	39	65
May	49	14	4	2	4	29	30	28	52	43	36	35
June	111	78	35	11	7	11	45	42	37	57	44	41
July	32	61	46	18	5	4	4	26.5	24	25	44	34

	Duration (Months)											
Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
January	0.55	0.78	0.72	0.67	0.75	0.67	0.59	0.61	0.67	0.78	0.8	0.88
February	0.22	0.35	0.62	0.56	0.51	0.64	0.56	0.51	0.49	0.58	0.71	0.73
March	0.06	0.04	0.11	0.38	0.33	0.3	0.53	0.38	0.38	0.35	0.47	0.6
April	0.06	0.01	0.01	0.03	0.25	0.23	0.2	0.36	0.29	0.27	0.25	0.42
May	0.31	0.09	0.02	0.01	0.02	0.18	0.19	0.18	0.33	0.27	0.23	0.22
June	0.71	0.5	0.22	0.07	0.04	0.07	0.29	0.27	0.24	0.36	0.28	0.26
July	0.2	0.39	0.29	0.11	0.03	0.02	0.02	0.17	0.15	0.16	0.28	0.22

Category	Probability of value being surpassed by lower value P (X)	Probability of occurrence
Exceptionally high	>0.95	0.05 (5%)
Notably High	0.87 - 0.95	0.08 (8%)
Above normal	0.721 - 0.869	0.15 (15%)
Normal	0.28 - 0.72	0.44 (44%)
Below normal	0.131 - 0.279	0.15 (15%)
Notably low	0.05 - 0.13	0.08 (8%)
Exceptionally low	<0.05	0.05 (5%)

$$Cunnane\ plotting\ position = \frac{Rank - 0.4}{n + 0.2}$$

Standard precipitation index

The Standardised Precipitation Index (SPI) uses monthly input data to characterise how observed rainfall deviates from the long-term average. The SPI has been calculated for Belmont for a range of durations and the results are given in units of standard deviation from the long-term average; negative values correspond to periods that are drier than average.

The cumulative rainfall from February to July 2025 has an SPI of -2.19 classifying the period as “Extremely dry” (Figure 8). February to July 2025 ranks the 4th driest historically at the Belmont catchment. Such significant negative SPI highlights the intensity of the dry spell. Importantly, Figure 8 shows that six periods classified as “exceptionally low” in the Cunnane analysis are also classified as “Extremely dry” according to the SPI.

Figure 8: 2025 Belmont Cunnane plotting positions and associated SPI values (top) and SPI classification table (bottom)

Period	Cunnane Index			Standardised Precipitation Index (SPI)	
	Rank	Plotting Position	Category	Value	Category
February - May	2	0.01	Exceptionally low	-2.68	Extremely dry
February - April	2	0.01	Exceptionally low	-2.75	Extremely dry
March - April	2	0.01	Exceptionally low	-2.65	Extremely dry
February - July	4	0.02	Exceptionally low	-2.19	Extremely dry
January - May	4	0.02	Exceptionally low	-2.00	Extremely dry
March - May	4	0.02	Exceptionally low	-2.35	Extremely dry
March - July	5	0.03	Exceptionally low	-1.91	Severely dry

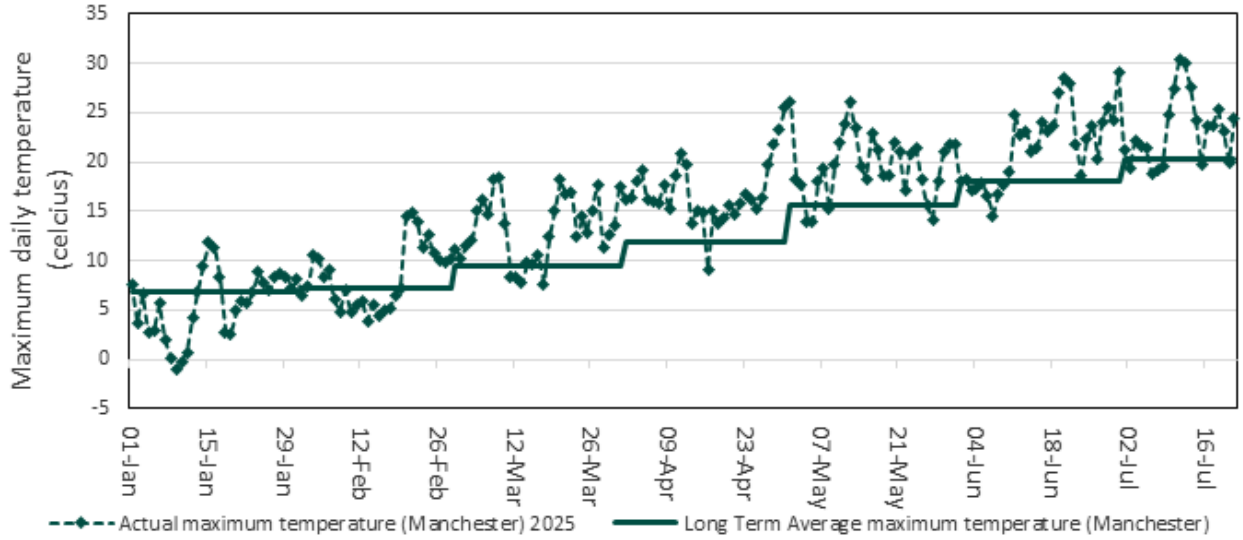
Category	SPI	Probability (%)
Extremely wet	2.00 and more	2.30
Severely wet	1.5 to 1.99	4.40
Moderately wet	1 to 1.49	9.20
Mildly wet	-0.99 to 0.99	68.2
Moderately dry	-1 to -1.49	9.20
Severely dry	-1.5 to -1.99	4.40
Extremely dry	-2.00 and less	2.30

Temperature

Temperature data from the Met Office for Manchester (Woodford, Ringway and Rostherne No.2) is shown in Figure 9. Belmont is located approximately 32km to the north of this meteorological station. Given Belmont is a compensation only reservoir, temperature does not directly impact reservoir storage (as it does for abstracted reservoirs where demand for water is linked to temperature); therefore, it is considered appropriate for Manchester data to be used to help support the case for an exceptional shortage of rain at Belmont.

This graph compares temperatures experienced this year to the long-term average. Coinciding with the exceptional shortage of rain, the data shows that for the majority of the time, the temperature has been above the long-term average since mid-March 2025, peaking at 30.3ºC on the 11 July 2025 (9.7ºC above the long-term average). Higher temperatures increase evaporation from water source catchments, contributing to elevated soil moisture deficits.

Figure 9: Variation in maximum daily temperature in the North West of England



Note: The long-term average is based on temperature data at Manchester Airport for the 1971-2000 period. Data from The Meteorological Office © Crown Copyright.

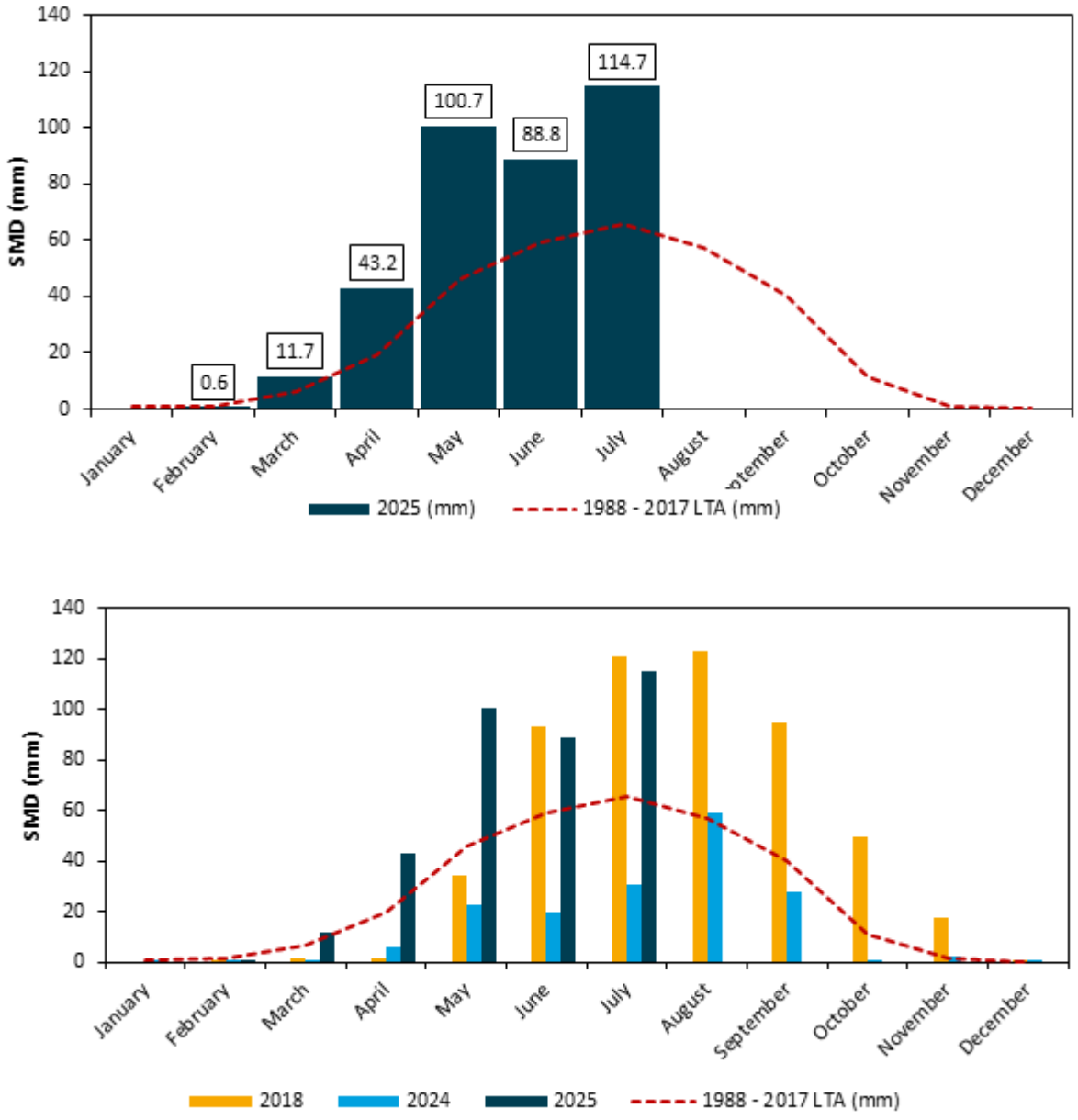
Soil moisture deficit (SMD)

The higher the SMD value (expressed in mm), the drier the soil is and the greater the amount of rainfall needed to replenish the soil moisture deficit before any significant refill of reservoirs can occur.

The exceptional shortage of rain, and well above long term average temperatures, has led to high levels of soil moisture deficit.

Figure 10 shows the Soil Moisture Deficit in the Belmont catchment. The monthly values are the average of the weekly values received from the Met Office. The level of soil moisture deficit in April, May, June, and July 2025 was high and well above average; this means that significant rainfall is needed before reservoirs can begin to refill. Data cannot be directly compared between drought years as dry weather events are of different durations and timing but the second graph in Figure 10 shows that SMD levels now are similar to those experienced at the same time in 2018 (a previous dry weather event).

Figure 10: Monthly average Soil Moisture Deficit (SMD) (mm) for the Belmont catchment (MORECS square 97)



Note: Data supplied by the Meteorological Office from MORECS. © Crown Copyright.

River flows

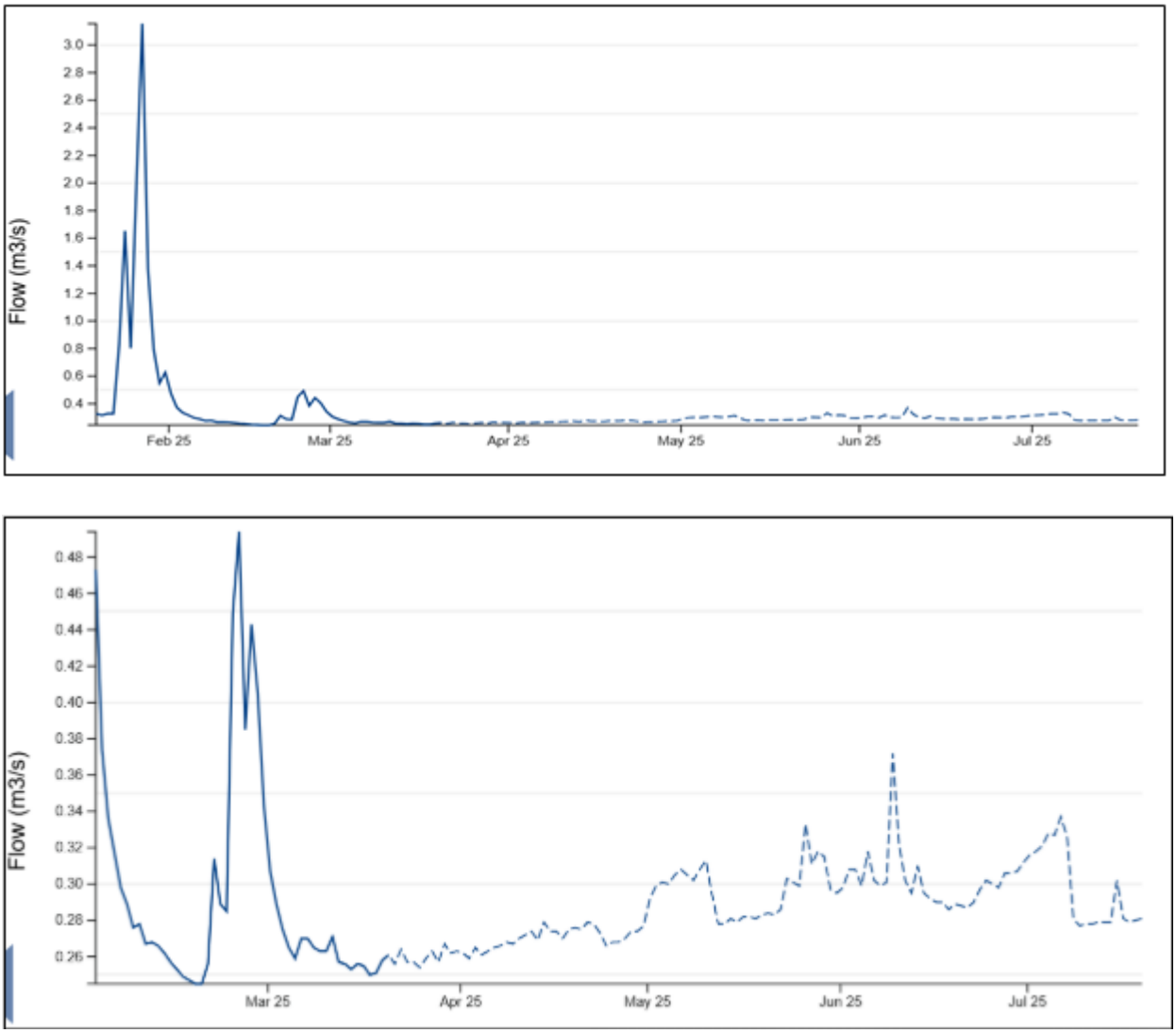
River flow data can be used to support the case for an exceptional shortage of rain. There is no relevant groundwater data that can be used to support this particular application.

The two graphs in Figure 11 show river flow data for Bradshaw tennis club on Bradshaw Brook (station ID 690470) taken from the Environment Agency's hydrology data explorer[5]. The top graph shows the last 6-months of data (since 19 January 2025) and the bottom graph shows data since 1 February 2025 (Belmont reservoir was last full on the 31

January 2025). These graphs demonstrate the low river flows that have been experienced in the area of Belmont reservoir since February 2025.

This further supports the case for an exceptional shortage of rain in the area.

Figure 11: River flow data for Bradshaw tennis club, Bradshaw Brook, from the Environment Agency's hydrology data explorer (the dashed lines represent recent unchecked data)



Met office weather forecast

A daily weather forecast is received from the Met Office for 36 locations in the North West of England, which covers the following 2-week period. Figure 12 is the most recent forecast received which covers the period from the 1st August to the 13 August 2025 and shows there is very little rain in the forecast for Adlington (the closest location to Belmont) under average (50th percentile) conditions.

Figure 12: Met Office rainfall forecast for Adlington for the 1 August to 13 August 2025 period

mm of rain forecast	5th percentile	25th percentile	50th percentile	75th percentile	95th percentile
01/08/2025	0	0	0.1	0.3	1.7
02/08/2025	0	0	0.1	0.4	3.8
03/08/2025	0	0.1	0.6	5.2	11.1
04/08/2025	0.6	2.6	4.6	6.8	18.8
05/08/2025	0.7	6.5	10.6	18.1	34.2
06/08/2025	0	0.1	0.3	1	4.3
07/08/2025	0	0	0.1	0.5	6.1
08/08/2025	0	0.1	0.7	2.1	17.2
09/08/2025	0	0.1	0.4	1.2	12.7
10/08/2025	0	0	0.2	1	11.2
11/08/2025	0	0	0.2	1.4	15.8
12/08/2025	0	0	0.3	1.9	17.5
13/08/2025	0	0	0.5	1.6	12.2

In addition to the above forecast, the Met Office[6] produce a 3-month outlook. The most recent outlook, issued on 28 July 2025, covers the 3-month period from July to September 2025. It states that for this period, the chances of a wet or dry summer are equally balanced. The next 3-month outlook is due to be issued by the Met Office on the 1 September 2025.

Reservoir inflows and storage

The effect of the exceptional shortage of rain, in combination with the higher than average moisture deficit and high temperatures, has led to reduced inflows to reservoirs, resulting

in significant reductions in reservoir storage. The impact on storage in Belmont reservoir can be seen in Figure 2.

Exceptional shortage of rain summary

Based on the above, rainfall over the assessed period of February to July 2025 (6 months cumulative rainfall), is considered to constitute an ESoR. The following summary results demonstrate this:

1. Total rainfall for the six months was the 4th driest for the equivalent period in 155 years of available records, with only 58.7% of the 1991-2020 long term average (LTA).

2. The rainfall probability ranking method for six months cumulative rainfall using Cunnane plotting positions demonstrates that the rainfall was classed as “Exceptionally Low” during that period.

3. The SPI value for six months cumulative rainfall is -2.19, which falls into the “Extremely Dry” category.

4. To support this assessment, soil moisture deficit (SMD), weather forecasts and reservoir storage were also considered.

8. Prospects for the reservoir storage

On the 11 August 2025, Belmont reservoir storage was at 31.56% net full.

The summer drawdown risks and refill prospects for Belmont reservoir have been assessed using UU Excel-based water resources simulation tool, Droughtwatch. The simulation was run both without (Figure 13) and with (Figure 14) the drought order being in place in order to assess the water storage benefits of the drought order that is being applied for.

Figure 13, without the drought order in place, shows that if there is a repeat of minimum historic inflows (i.e. a repeat of the worst drought on record) then Belmont reservoir could reach very low levels (a minimum of 0% net full) putting the compensation flow release at risk.

Figure 13: Droughtwatch simulation for Belmont reservoir storage using a start position of 32.51% net full on 10 August 2025 – without drought order in place (compensation flow of 9 Ml/d plus 10% over-release allowance)

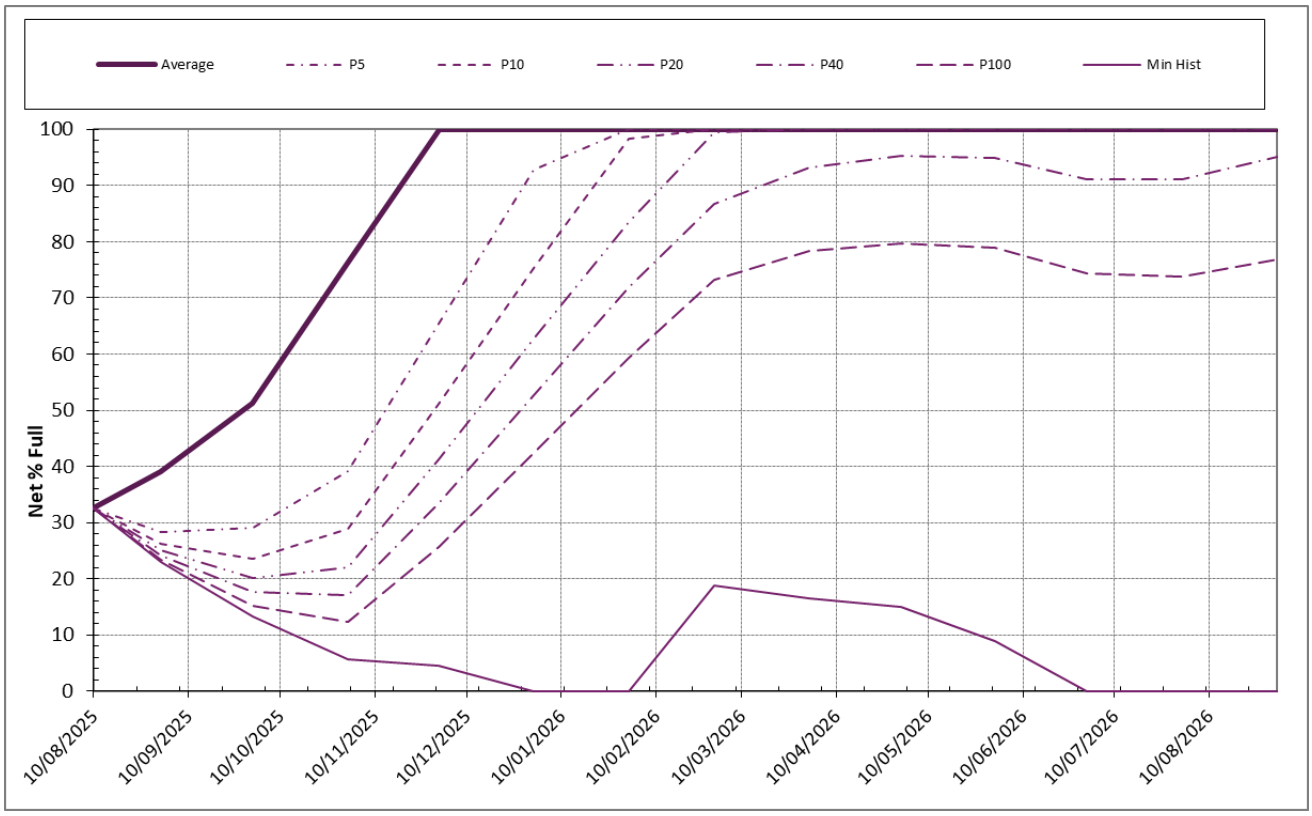
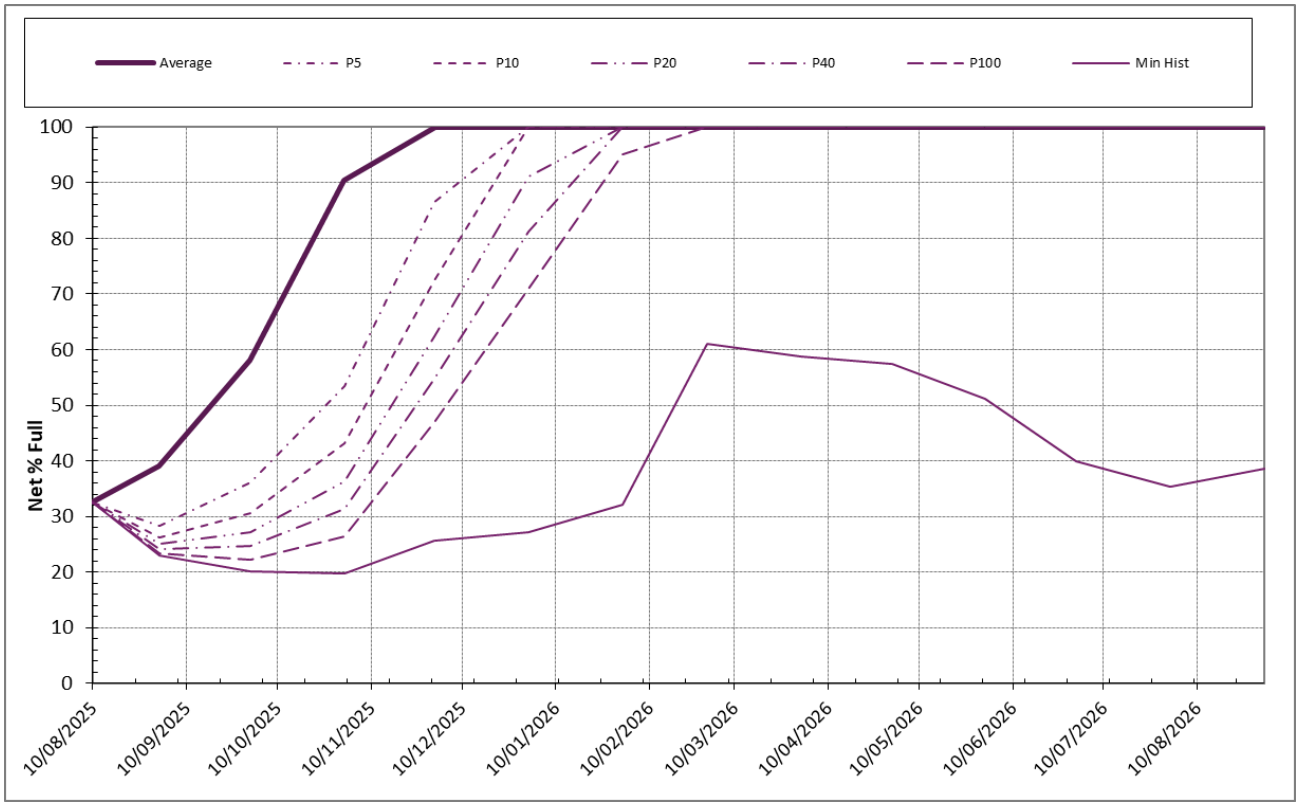


Figure 14, with the drought order in place for 6-months from the start of September 2025 to the end of February 2026 inclusive (i.e. compensation flow reduced from 9 Ml/d to 4.5 Ml/d), shows that if there is a repeat of minimum historic inflows Belmont reservoir could drop to a minimum of 20% net full (vs. 0% without a drought order in place). A key benefit of the drought order is that it gives the opportunity to improve reservoir storage over the autumn/winter period as with a drought order in place, Belmont could recover to 60% in March 2026 under minimum historic inflows – compared to only 20% without a drought order. Therefore, the benefit of the drought order is to increase reservoir storage and reduce the risk of the reservoir emptying; ensuring that some flow can continue to be provided to the downstream watercourse.

If average inflows are experienced (i.e. average rainfall) then under both scenarios the reservoir should refill.

Figure 14: Droughtwatch simulation for Belmont reservoir storage using a start position of 32.51% net full on 10 August 2025 – with drought order (compensation flow of 4.5 Ml/d plus 10% over-release allowance) in place for 6 months from September 2025



9. Potential impact of the drought order and mitigation measures

Full details of the environmental issues, assessment, environmental monitoring and mitigation measures associated with the Belmont drought order are provided in the accompanying Environmental Assessment Report which has been prepared by independent environmental consultants. The Environmental Assessment is prepared in accordance with Government regulations and good practice guidance, and in particular follows Defra guidance for drought orders and permits. It includes details of the environmental monitoring UU propose to undertake during and after implementation of a drought order at Belmont.

The area potentially affected by the drought order is the watercourse (Eagley Brook) downstream of Belmont reservoir. A map showing the affected area is included in the accompanying environmental assessment report.

10. Conclusions

There has now been an exceptional shortage of rainfall since February 2025 in the Belmont catchment area. Total rainfall at Belmont for the six months from February to July 2025 was the 4th driest for the equivalent period in 155 years of available records, with only 58.7% of the 1991-2020 long term average (LTA). The rainfall probability ranking method for the 6 months cumulative rainfall (February to July 2025) using Cunnane plotting positions demonstrates that the rainfall was classed as “Exceptionally Low” during that period. The SPI value for the 6 months cumulative rainfall (February to July 2025) is -2.19, which falls into the “Extremely Dry” category.

In addition to an exceptional shortage of rain, high temperatures and soil moisture deficits have led to a reduction in the storage in Belmont reservoir such that the ability to continue to provide the compensation flow release of 9 Ml/d to Eagley Brook is at risk.

The storage in Belmont reservoir is low - on the 11 August 2025 the reservoir was 31.56% net full. Without a drought order in place, it is expected Belmont will reach dead water on the 15 October 2025 if the lack of rain continues.

This drought order to reduce the compensation flow release from 9 Ml/d to 4.5 Ml/d is necessary due to an exceptional shortage of rainfall which threatens UU ability to continue to provide the full compensation flow release from the reservoir to the downstream watercourse. Unless significant rainfall arrives, there is likely to be a continuation of an exceptional shortage of rain and the risk will remain.

Action must be taken now to safeguard future compensation releases in the event that drought conditions continue and to avoid greater impacts on the environment if the reservoir storage were to be completely depleted resulting in no compensation flow being provided to the downstream watercourse, Eagley Brook.

Would you like to find out more about us or your environment?

Then call us on

03708 506 506 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Or visit our website

www.gov.uk/environment-agency

incident hotline

0800 807060 **(24 hours)**

floodline

0345 988 1188 **(24 hours)**

Find out about call charges (https://www.gov.uk/call-charges)

Environment first

Are you viewing this onscreen? Please consider the environment and only print if absolutely necessary. If you are reading a paper copy, please don't forget to reuse and recycle.