

Water Management: *Internal Briefing Note*

Produced by: Water Management Team

Date: 17/06/2022

Based on
13.06.22 data

REGIONAL WATER RESOURCES POSITION STATEMENT (North West, Yorkshire North East & West Mids)

Hydrological Summary/Outlook

The north-west region received 67% of its long-term average (LTA) rainfall from March-May 2022. In May the region received 95% of the LTA rainfall, while 45% of the LTA has been received in June so far. Despite some rainfall, our reservoirs have not seen any significant refilling, as most of the rainwater has been absorbed into an already very dry landscape. River levels in the region range from normal to notably low for the time of year. For more details see: [Rainfall & River flow data](#).

The Met Office's long-term forecast for June-July-August suggests a reduction in the chance of a wet summer compared to normal, with impacts from heatwaves being more likely than normal. Although with the slight reduction in the chance of a wet summer, spells of wetter weather are likely to bring heavy showers or thunderstorms at times. The short-medium term forecast suggests that northern England will see unsettled conditions with spells of rain during mid to late June.

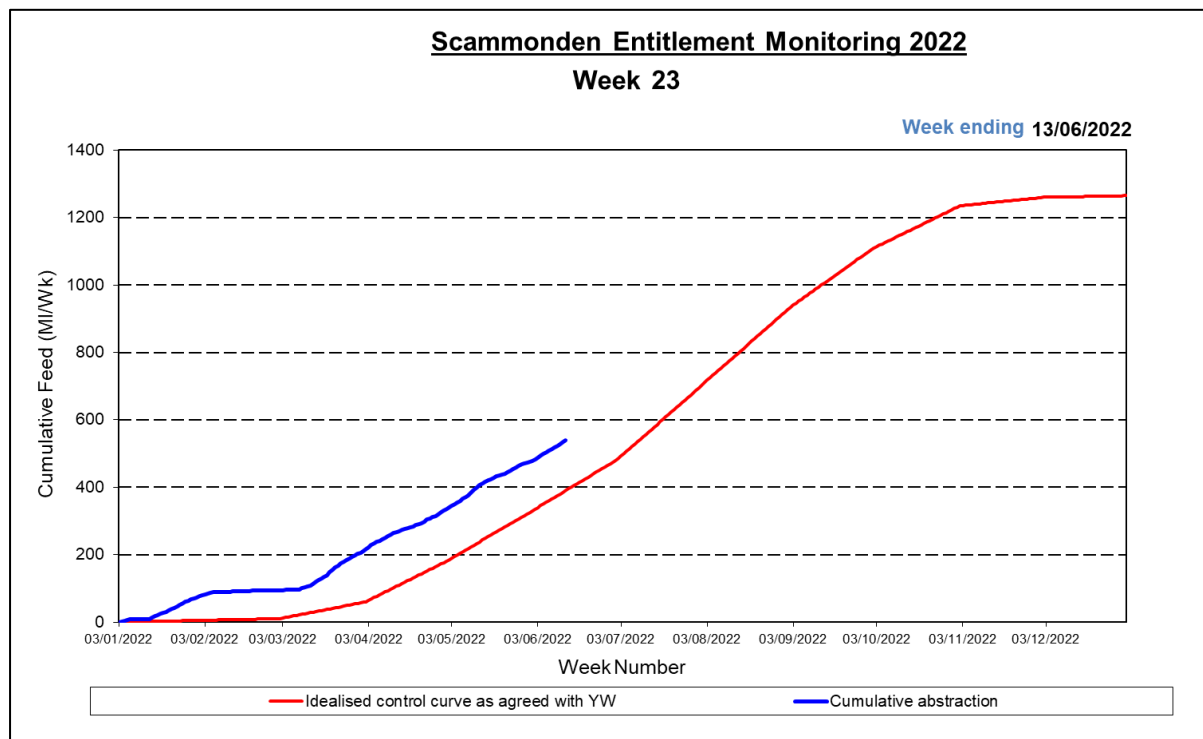
Even though the start of 2022 has been dry, similarly as in recent years, the lack of water resources affecting the Trust's northern waterways is not purely down to the lack of rainfall, but this combined with the need to hold down critical reservoirs which has impacted the potential for refill and thus water resource availability to supply the canal.

Huddersfield Narrow Canal

Current Resource Position & 2022 season projections

The Huddersfield Narrow Canal summit is supported by two main feeds, Diggle reservoir which feeds into the west side of the summit pound/Standedge tunnel (upstream of lock 32W), and the Scammonden pipeline (an annual entitlement provided by Yorkshire Water) which feeds into the east side of the summit/Standedge tunnel, just upstream of lock 42E. Diggle was held down earlier in the season for investigative works. As a result, this placed a greater demand on Scammonden. Due to the dry weather, increasing canal demands, and local issues, we have used more of this entitlement feed than normal for this time of the year (graph 1). Where possible, Diggle is now being used to supplement the Scammonden entitlement and meet canal demands.

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Graph 1- Scammonden pipeline 2022 feed to date (13 June)

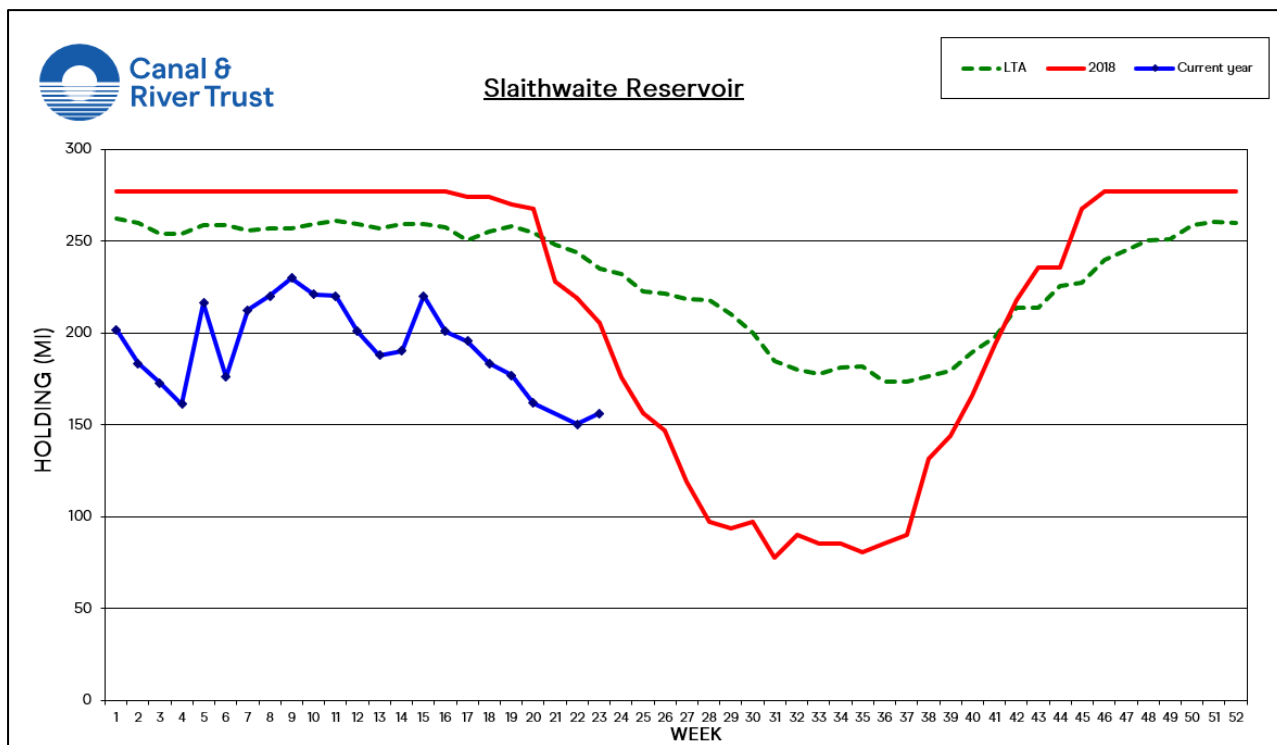
Current demands from the Summit are around 5 MI/d from Scammonden and 2MI/d from Diggle. Diggle has received some inflows and is able to supplement the feed from Scammonden but due to its small size, it is unable to support the canal on its own. Once the annual entitlement from Scammonden runs out, there will be no additional water available from Yorkshire Water.

It is important we maintain some resource in the reservoirs during the hot summer months to protect the canal infrastructure, the environment, and safeguard the fish in both the canals and reservoirs by utilising a minimum feed required to the canal whilst maintaining enough water in the reservoir for fish stocks. The requirements for this sweetening flow along with other monitoring and mitigation in the reservoirs will help direct the decisions around heightening restrictions.

East side

Engineering works have been completed on the East side of the HNC to minimise known losses and keep the limited water in the canals. Another issue has developed with a culvert between 9E and 21E and the navigation is currently closed for investigations and repairs to the culvert. As a result, the feed from Slaithwaite has been reduced to save water. At the current feed, and assuming no additional inflows, the reservoir will reach 30% holding in 5 weeks (around mid to late July). At this point, enhanced environmental monitoring will be required to safeguard the fish and wider environment.

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Graph 2- Slaithwaite reservoir holding (most recent level recorded on 13th June)

The pumps at Britannia Bridge, between locks 12 and 13E, have been running since 12th April. We are licenced to pump from the River Colne until the end of September as long as the river levels do not drop below the Hands Off Flow (HOF) of 27.13 Ml at Longroyd Bridge. If the river levels subside beyond this threshold, this will place additional pressure on the reservoir resources. The Trust has submitted an application to the EA to remove the seasonal restriction and enable abstraction all year.

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What are we doing about it?

A two-stage approach has been adopted, through discussion with stakeholders, to reduce canal demand by restricting passage:

From Monday 9 May 2022, the following operating times have been in place:

Tier 1

Boater assistance and chaining up of Diggle flight (locks 24-32) and Marsden flight (lock 34 to 42)

Mon – Diggle to Marsden passage only

Wed – passage in both directions

Fri - Marsden to Diggle passage only

Lock 1E - locked and booked passage only

A link to the restriction notice on the Trust's website can be found here:

<https://canalrivertrust.org.uk/notices/22023-huddersfield-narrow-canal-restrictions-lock-32e-to-lock-42e-and-lock-24w-to-lock-32w-and-standedge-tunnel>

If deemed necessary, heightening of restrictions will be considered.

Peak Forest and Macclesfield Canal

Current Water Resource Position

Reservoir	Maximum Holding (MI)	Current Holding (MI)	% full
Toddbrook	1238	Cannot supply canal	Cannot supply canal
Combs	1363	864	63%
Bosley	1347	344	26%
Sutton	346	148	43%
Total	4294	1356	32%

Table 1- Peak Forest & Macclesfield Canal current reservoir holdings (level readings taken on 13 June)

As of 13th June, only 32% of the total reservoir resource that supplies the Peak Forest & Macclesfield canal is available (table 1).

The Peak Forest and Macclesfield canal is usually supplied by four reservoirs (Toddbrook, Combs, Bosley and Sutton), which all feed into the summit. Toddbrook has been offline since the spillway incident in 2019 and does not currently supply the canal. Critical engineering works at Bosley Reservoir over winter 2021/22, requiring it to be held down at 10% holding, were completed in March. Since the completion of the works at Bosley, there has been very little refill due to the dry weather. However, where available, inflows to Bosley have been used to support a nominal feed to the canal.

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As a result, the canal has been reliant on Combs Reservoir, which currently supplies the canal through a Put and Take scheme using temporary pumps, and Sutton Reservoir, the smallest reservoir of the group.

Combs has been used as the main feed due to its larger reservoir capacity to supply canal. Temporary pumps are being used to convey water from the reservoir to the canal (via the River Goyt), while works are completed along the feeder channel. As part of the Put and Take agreement with the Environment Agency, 10% of the water being conveyed from Combs needs to be left in the river to compensate for any losses. The pump capacity and generator size/performance currently limit what can be fed to the canal. In addition, the flows in the River Goyt have recently become extremely low. Although we are supplementing the river flow with the 10% from Combs, the low river levels mean that the pumps become less effective and require frequent maintenance and debris clearance.

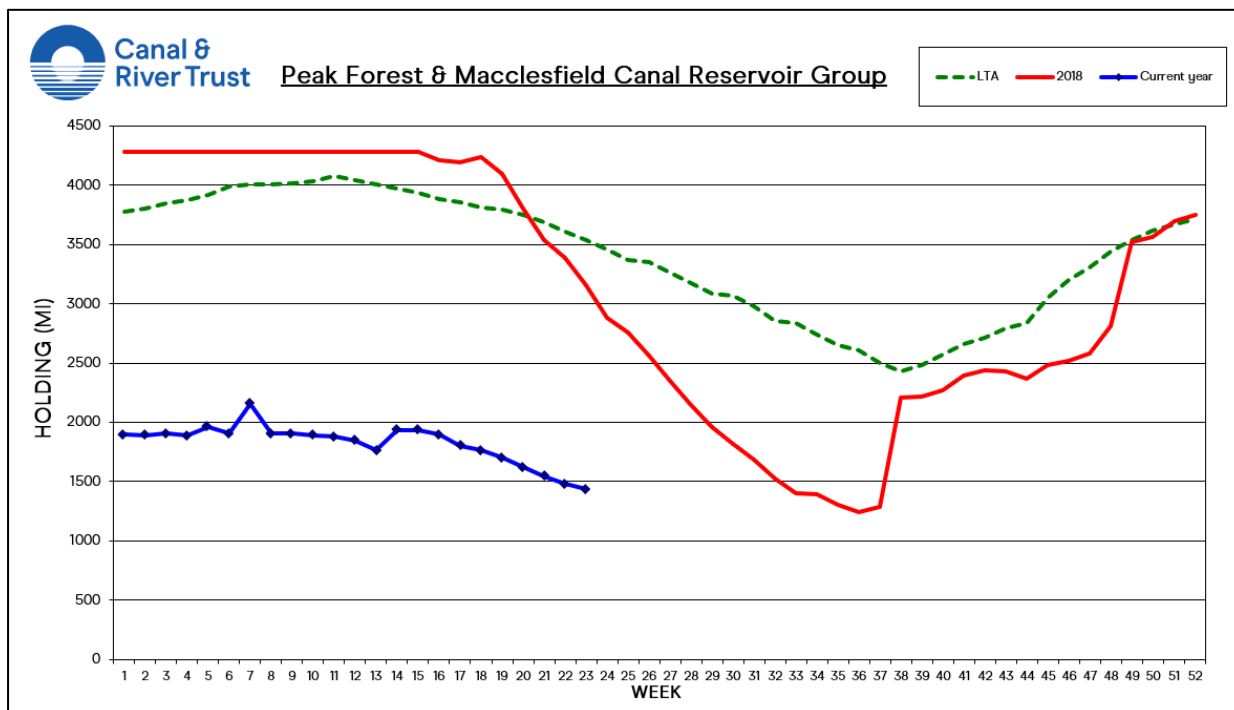
Whilst the holding in Bosley reservoir remains low, Sutton is being used to feed the Macclesfield Canal and support the levels on the Trent & Mersey Canal. However due to its small capacity, Sutton is being drawn down quickly. With the higher temperatures in summer, the reservoir holdings must be kept above a certain level to be able to support fish stocks and provide a sweetening flow to the canal.

Based on Sutton's current holding and feed to meet demands, the reservoir could reach its minimum Spring/Summer holding in just over a weeks time, assuming no significant rainfall/inflows.

Combs is also significantly reducing in holding and is estimated to reach its minimum Spring/Summer holding in less than 5 weeks, assuming no significant rainfall/inflows.

Graph 3 shows the current group holding of the Peak Forest & Macclesfield reservoirs.

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Graph 3- Peak Forest & Macclesfield group holding for 2022 (blue line) with the 2018 holding (red line) as a dry year comparison, and the long-term average (which covers 1998-2021) (green dotted line)

What are we doing about it?

Restrictions

The Trust introduced restrictions to boat passage on 4th April, these were heightened from 25th April. Due to the decreasing water resources outlined above and the increased canal demands, navigation through the lock flights on the Peak Forest and Macclesfield Canal is being suspended from Friday 24 June 2022. Whilst the closures will prevent use of the lock flights, cruising between the locks will remain available. We anticipate that the lock flights will remain closed for several weeks, but this is entirely weather dependent. Implementing these closures means that we can conserve water, allowing the reservoirs to start to refill, so that when we are in a position to re-open, albeit likely with restrictions, we will be able to open for as long as possible.

A link to the restriction notice on the Trust's website can be found here: [Lock Flight Operating Times, Macclesfield and Peak Forest Canals | Canal & River Trust \(canalrivertrust.org.uk\)](https://www.canalrivertrust.org.uk/lock-flight-operating-times-macclesfield-and-peak-forest-canal)

Leeds & Liverpool

Current resource position

Canal demands within recent weeks have *reached a record high due to the increase in boat movement following the re-opening of Lock 31, Eshton Road Lock*. The very high demands, coupled with the ongoing engineering works at Barrowford Reservoir, has placed significant pressure on summit reservoirs.

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During early April, Rishton Reservoir was used to refill the two completed stoppages on the Burnley Pound, the breached section by Rishton and the Altham Embankment.. The ongoing dry weather has meant there has been little refill in Rishton since. Whilst Rishton continues to supply the canal, the absence of Barrowford, which would normally be the main feed to the non-summit section, has placed an increased pressure on summit reservoirs to feed the non-summit section. This, in addition to the very minimal inflows due to the dry weather, has resulted in the summit reservoir holdings quickly declining. Tables 2 and 3 show the latest recorded resources in the non-summit and summit reservoir groups, respectively.

Reservoir	Total Capacity (Ml)	Current holding (Ml)	% full
Rishton	584	335	57%
Barrowford	460	29	6%
Total	1044	364	35%

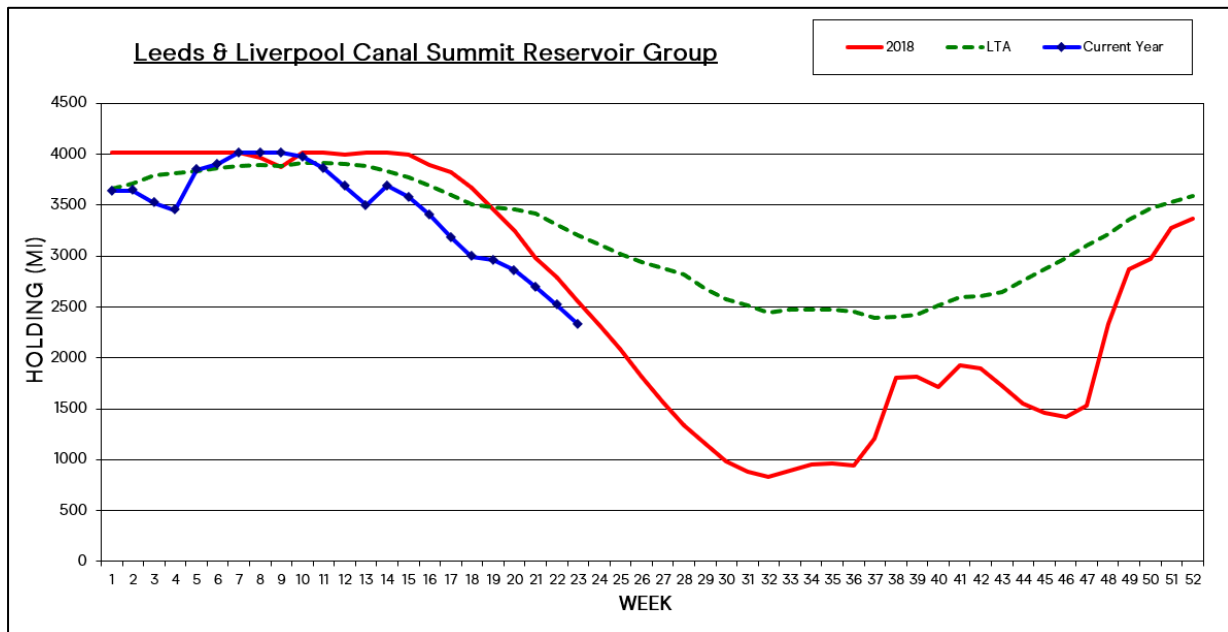
Table 2- Leeds and Liverpool non-summit reservoir data from 13 June

Reservoir	Total Capacity (Ml)	Current holding (Ml)	% full
Lower Foulridge	1555	793	51%
Upper Foulridge	466	209	45%
Slipper Hill	169	110	65%
Whitemoor	676	448	66%
Winterburn	1150	770	67%
Total	4016	2329	58%

Table 3- Leeds and Liverpool summit reservoir data from 13 June

The graph below shows the group holding for the summit reservoirs (Winterburn, Whitemoor, Lower Foulridge, Upper Foulridge and Slipper Hill) as of 13 June 2022 in comparison to the long-term average (LTA) (which covers the period 1998 - 2021) and the resource position in 2018, which was the last significant drought year to affect the Leeds & Liverpool Canal. It is important to note the increased demands on the summit reservoirs this year in contrast to during 2018 when Barrowford reservoir was in operation.

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Graph 4- Latest summit reservoir holdings on the Leeds & Liverpool Canal (data from 13 June)

With the current high demands, we are expected to reach 30% holding in mid-July (assuming no inflows) where we would then need to use the remaining water for sweetening flows to protect fish stocks and canal infrastructure.

Other planned works this season

Works to Winterburn reservoir are scheduled to start in August and run for up to 3 months. Subject to a forecasting system being implemented, which is under construction, a reduced drawdown has been agreed. Having a reduced drawdown would allow the reservoir to provide a supply to the canal, if rainfall occurs, whilst maintaining sufficient supplies in the reservoir to maintain the compensation feed, albeit with less feed potential than in a normal year.

What are we doing about it?

Restrictions

Since 4th April the Trust introduced restrictions to boat passage these restrictions were heightened from 13th June. To be able to continue to protect our water resources and infrastructure, from Friday 24 June, we will be further reducing the current opening times for the locks along the canal. Without a sustained and significant rainfall, a full closure is likely before the end of July, significant reduction in water use could delay a potential closure, but this without significant inflows into our reservoirs will not prevent the need to close the canal.

A link to restriction notice on the Trust's website can be found here [Lock Flight Operating Times, Wigan to Kirkstall, Leeds & Liverpool Canal | Canal & River Trust \(canalrivertrust.org.uk\)](https://www.canalrivertrust.org.uk/lock-flight-operating-times-wigan-to-kirkstall-leeds-liverpool-canal)

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Rochdale

The Rochdale Canal has approximately 15 controlled and numerous uncontrolled feeders entering predominantly on the eastern side of the canal.

Many of the controlled feeders along the Rochdale Canal, including Luddenden Foot Pump, are now licensed under the Water Act 2003 and have Hands of Flow (HOF) conditions, which may result in the Trust reducing or ceasing abstractions when instructed by the EA due to low flows in the River Calder (typically following prolonged dry weather).

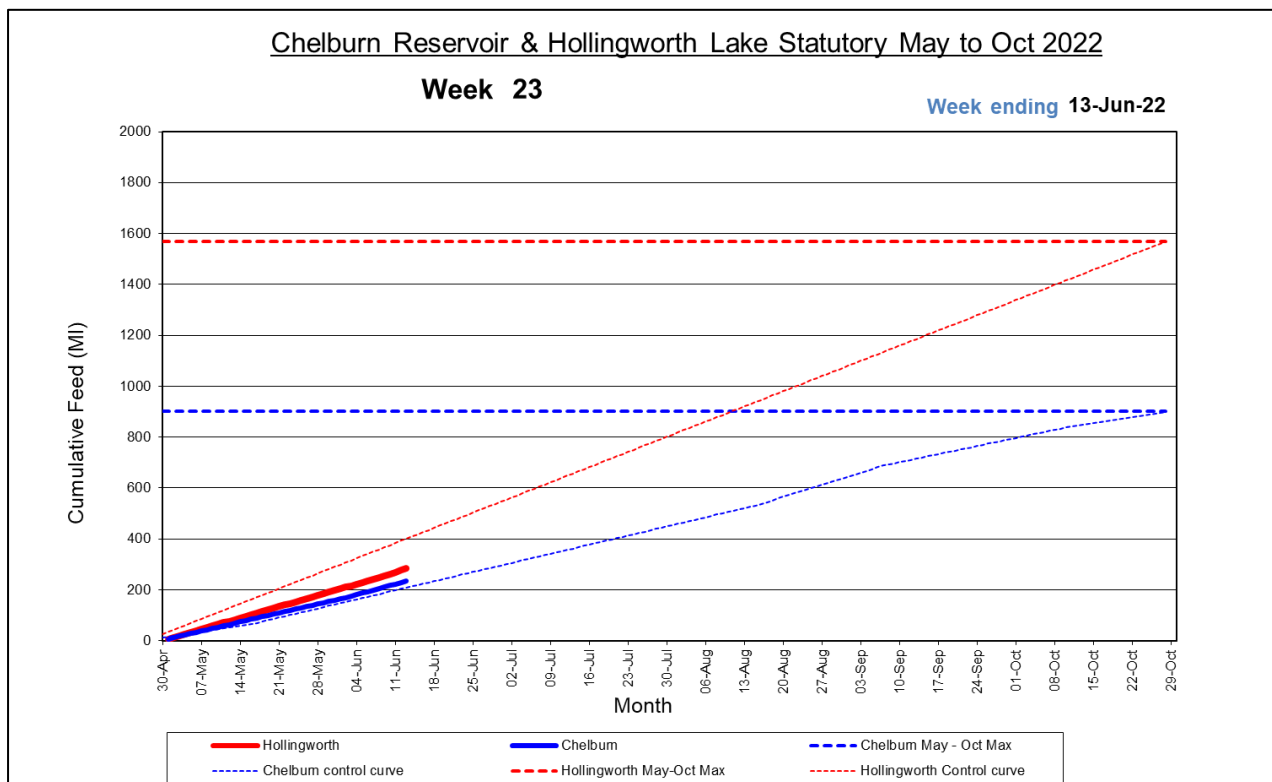
Rochdale Canal is also supplemented with a pumped abstraction between Locks 15 and 16, which abstract water from the River Calder, using temporary pumps. These pumps also have a Water Act Licence conditions including a HOF and a seasonal limit, where they can only be used between April and October inclusive. The pumps have been used to support the canal since 23rd April. The Trust has submitted an application to the EA to remove the seasonal restriction and enable abstraction all year.

Due to the ongoing dry weather, river flows and surface water feeds are declining. Therefore, there is a risk that the Trust abstractions will be reduced if no significant rainfall/inflows to the canal occurs. Due to the HOF threshold on the River Calder being reached in association with Luddenden Foot abstraction, we are currently operating under the required limited abstraction conditions. If the river flow continues to recede, there is a risk that the other feeders from the River Calder associated with lower HOF thresholds will be crossed and abstraction will have to cease.

Chelburn Reservoir and Hollingworth Lakes, owned by United Utilities, also provide a feed into the canal in the form of an annual entitlement. This year there is a greater reliance on the Chelburn summer entitlement to supply the canal, as water act licence conditions currently restrict the abstraction of one of our main feeders into the western side of the canal.

Graph 5 shows the current 2022 usage of the Hollingworth and Chelburn entitlements compared to the idealised usage. This graph shows that we are currently using more than the idealised usage for Chelburn, meaning that we may reach the annual entitlement limit earlier than normal. Due to insufficient rainfall/inflows and surface water feeders declining, the demand on Chelburn has recently increased in order to maintain the summit level.

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Graph 5 - Current usage of 2022 Hollingworth and Chelburn summer entitlements (data from 13th June)

What are we doing about it?

The Trust are submitting an application to vary the abstraction licence condition on the feeder currently restricting the supply to the western section. However, it is unlikely that outcome of this application will be received within the next four months.

There are currently no planned canal wide restrictions across the Rochdale canal. However, with river flows and surface water feeders continuing to decline, there is a risk that water resource availability to the Rochdale Canal will be reduced in the coming weeks if no significant rainfall/inflow occurs which will have the potential for restrictions. The Water Management Team continue to monitor the water resource situation closely with the region.

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Wider consequences for other canals

There is the potential for wider implications to canals further afield which receive an in direct supply of water from those mentioned in this position statement. We will continue to consider these wider implications and continue monitoring the water resource impacts as the season develops.

Trent & Mersey Canal

The water resource constraints associated with the Peak Forest and Macclesfield reservoirs will result in lower feeds entering the Trent & Mersey along the Bosley flight. This in turn will require additional supply from the Caldon group reservoirs via Bedford Street, which may not be sustainable in a dry season. Reduced supply to the Trent & Mersey can result in low levels in the summit causing issues at Harecastle Tunnel and can arise with very little lead in time.

Ashton canal

The Ashton canal may also be impacted by the reduced water resource availability from the Peak Forest & Macclesfield reservoirs, with lower feeds entering via the Lower Peak Forest Canal. Also, the resource constraints impacting the HNC may also result in a reduced supply to the Ashton Canal from the HNC west. However, as the HNC west receives a number of substantial surface water inflows which are currently looking health, this is not an immediate concern.

What are we doing about it?

Water resource monitoring of these canals will continue, but there are no immediate concerns and thus no current plans to introduce restrictions.