

## Yorkshire Water Report to Gouthwaite Board of Management 11 April 2019

A drawdown of -2.7m (50% of capacity) was required for works on the Gouthwaite overflow from June 2017 to May 2018. During this time releases were made to try to achieve this drawdown, and Yorkshire Water tried to maintain a minimum release of 62 tcmd as long as stocks did not fall to very low levels.

A dry weather contingency plan was agreed with the Gouthwaite Board of Management and the Environment Agency, and if required levels in Gouthwaite would have been supported from the upstream reservoirs. There were some initial teething problems with communications, but once all requirements were understood- particularly the need for flow reductions to only be made in the morning, the process ran smoothly.

The graph shows reservoir levels and releases from January 2017 until April 2019. The required drawdown is also shown, and it is clear that despite the best endeavours of the reservoir operators, it was difficult to maintain that drawdown at all times, and the reservoir spilled on 5 occasions during the drawdown period.

After the drawdown period ended, reservoir levels returned to where they would have been very quickly (shown by dashed modelled and solid actual lines converging in early May 2018)

2018 was a far drier year, and whilst it would have been easier to maintain the drawdown than in the summer of 2017, if we had drawn the reservoir down in June 2018 as we did in 2017, we would not have been able to maintain the 62tcmd release in the summer of 2018 releases have been as low as the 28tcmd band during July.

Yorkshire Water applied for drought permits for the first time since the 1995 drought. The permits applied for were to increase annual abstractions on the rivers Wharfe and Derwent (without changing daily limits), to enable a high demand period in winter to be met. The permits were not implemented, but the fact they were applied for illustrates how dry the year was. Gouthwaite levels remained healthy, partly due to the lower releases at higher levels in the new rules as compared to the pre 2003 rules.

### **Gouthwaite Reservoir Safety Works**

The tumblebay was emptied to allow structural inspection – the emptying was achieved by mobile pumping at considerable cost and involved temporary compensation flows.

The valve tower internal metalwork has been repainted to prolong asset life.

The new spillway channel has been installed to safely convey extreme flood flows.

The downstream leg of the draw down siphon has been installed complete with valves and dedicated tee to be used to provide compensation in the event that an inspection of the tumble bay is planned.

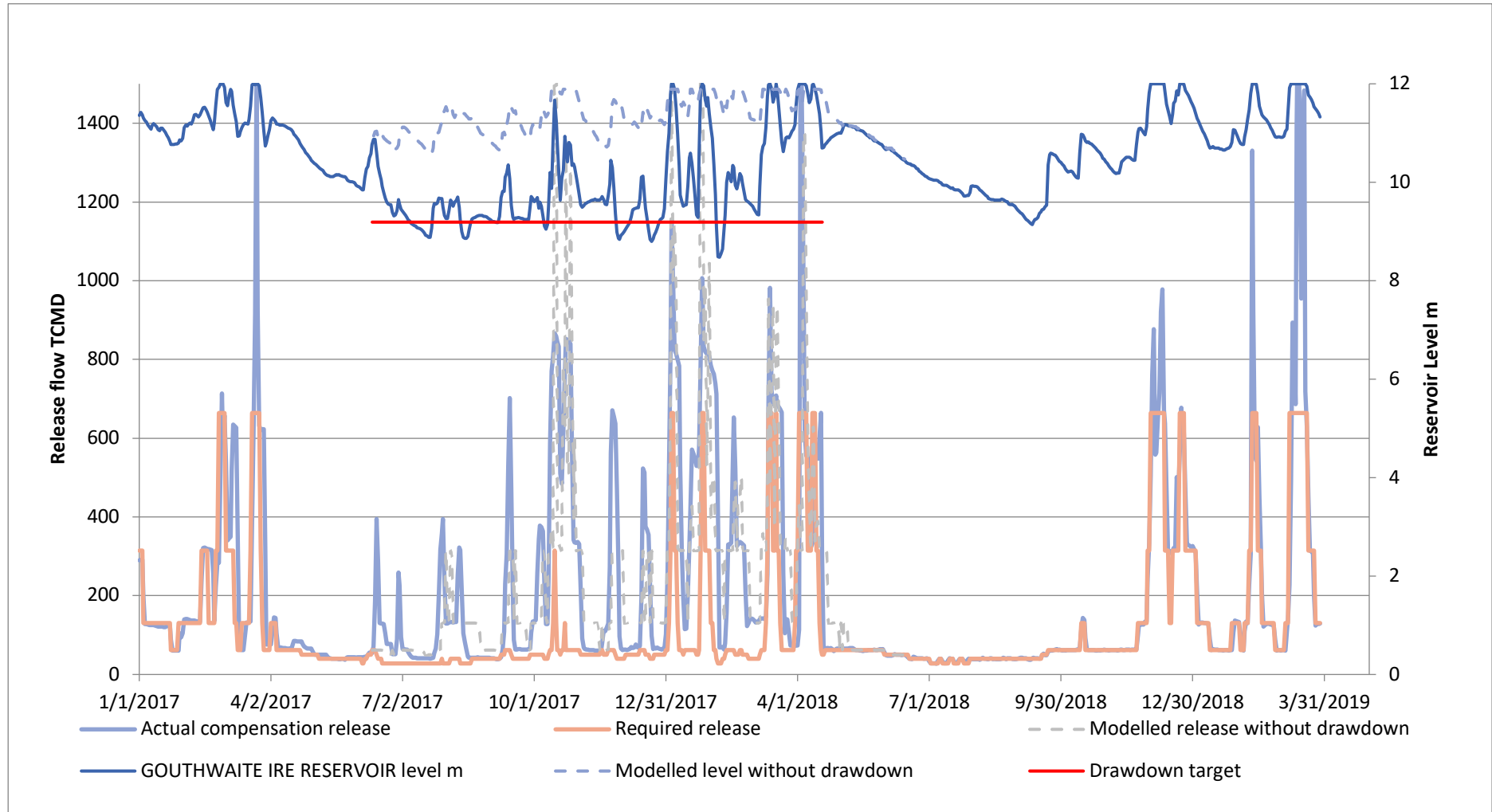
Grounds have been reinstated and trees planted.

Works are now scheduled for the next AMP period (2020 – 2025) to install the upstream leg of the siphon. This work will require further water control management.

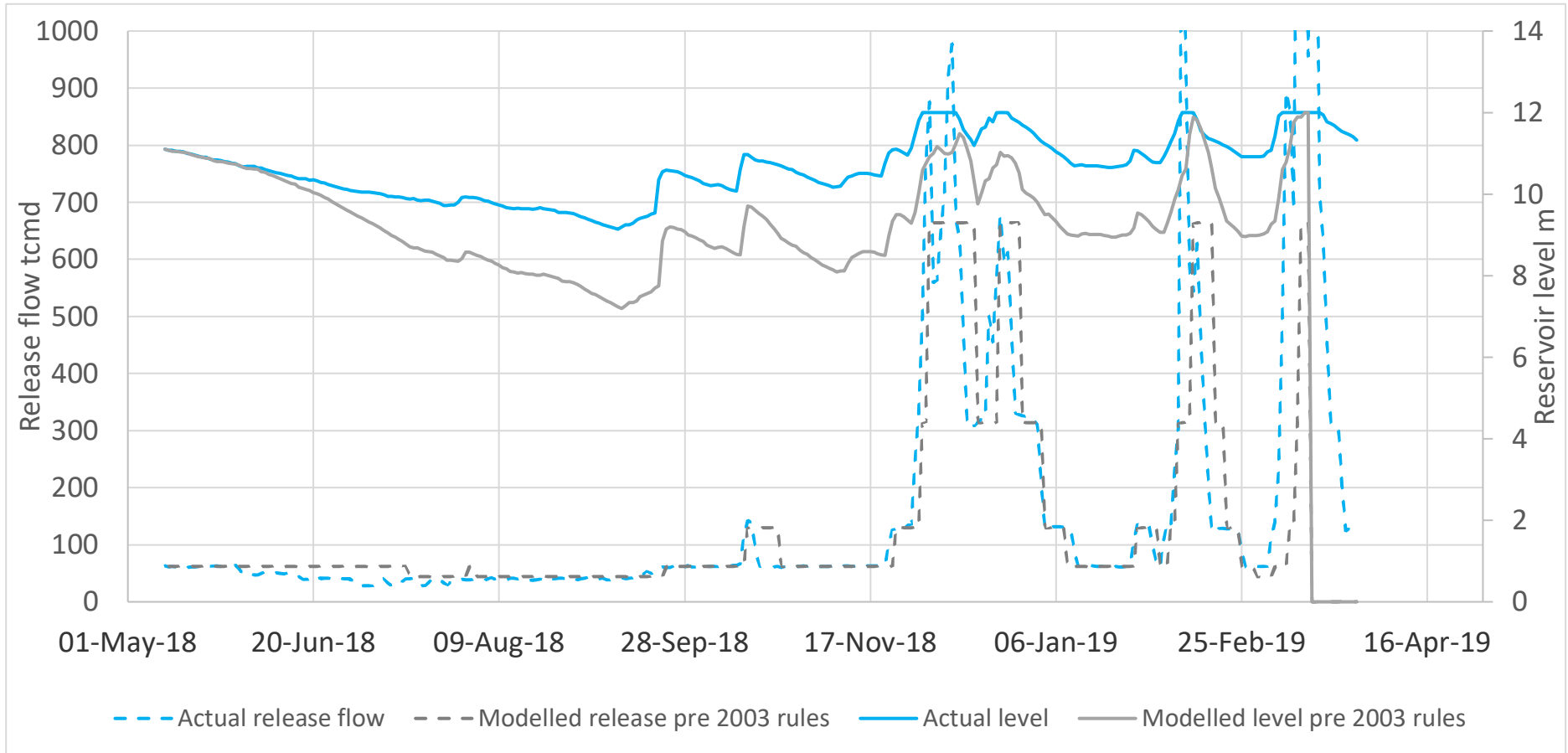
All elements of the scheme have been delivered to programme and the water levels have been managed throughout as described above.

Yorkshire Water intends to progress with the second part of the Siphon installation but this will not start before 2020. Some control of the reservoir level will be necessary during elements of the construction. However until have entered into a contract and agreed the construction methods and programme it is not possible to provide much more detail. Yorkshire will strive to ensure that the impact and duration are kept to a minimum and desire that this is less than it was for the reconstruction of the spillway and the first part of the siphon.

### Gouthwaite Levels and compensation releases



**Gouthwaite releases and levels in 2018-current rules and pre 2003 rules**



Receipe