Thirlmere Reservoir - UU's Licence Renewal Application
Response from Keswick Flood Action Group (KFAG)
5 February 2026

Keswick does not flood from the River Greta if there is sufficient storm space in Thirlmere reservoir. KFAG's goal has always been to achieve storm space, particularly in the winter months, to reduce peak flows from Thirlmere and disconnect them from those in the rest of the catchment.

pscpublicresponse@environment-agency.gov.uk

SUMMARY:

We do not have any concerns over impacts to water supply. UU has not sought to increase its abstraction licence for many years. The water transfer infrastructure south has restrictions so water usage to the south, the largest volume abstracted, is limited. Furthermore, UU, as long-term suppliers of water to the west, should be fully confident that the TTS, although now the only source of supply for those western communities, is adequate. **Therefore, we support the PRINCIPLE for like for like renewal of the nine Thirlmere abstraction licences.**

However, we reject the use of the data set, methodology, analysis and assumptions UU has presented within their application. Whilst recognising that abstraction licences are governed by a specific legal framework that does not include flood risk management as a criterion for licence approval, this application includes an intention to remove the current FDD (the "KFAG releases") and thus materially alters the timing and range of flows into St Johns Beck. We evidence the issues and the length of time any agreement over achieving a replacement FDR regime may take, which suggest that the river flows may return to, what we believe to be, environmentally disadvantageous minimal compensation flows, far removed from the dynamic flows that normal mountain rivers provide, for years before a hybrid system can be agreed. Furthermore, the impacts of a new FDD throughout the wider catchment - including potential increased pollution risks – have not been fully examined. **We therefore oppose their *"assessment under Habitats Regulations of cessation of the reservoir level-based flood drawdown releases that have been made from Thirlmere"* until there is a fully discussed, agreed, and trialled replacement procedure. We submit that it is fair and reasonable to continue with the FDD ("KFAG releases") until such time as a satisfactory hybrid system can be agreed. Both UU and the EA agreed to continuing the "KFAG releases" at a meeting on 29/1/26 but we have no confidence in this outcome being achieved in a timely manner.**

The Ricardo Environmental Report states: *1.2). Currently the only feasible way of facilitating an increased frequency of larger flows down St John's Beck is to allow Thirlmere to spill*. Far from accepting this as the status quo, **the application fails to consider how the reservoir could be actively managed to ensure that the optimum flows for the environment can be assured and achieved at the appropriate times** i.e. recommend/examine the possibilities for using the upper valves. **This licence lasts for 5 years and should take into account changes which are planned during that period, namely the upgrade/replacement of the upper scour valves (USVs), insisting on their being fully functional.** With such critical information omitted the application, is, at best, misleading.

KFAG wishes to submit evidence on the following matters:

- We do not accept that the consultation has been "fair and transparent" as is stipulated in the final paragraph of the "How you can get involved" (document attached to the email circulated on 9 January 2026).
- The data and its analysis in the Ricardo report is unsuitable to be used to make the conclusions over satisfying flows. **Averaged daily flow rates cannot accurately confirm whether or not a flow has been achieved over the necessary period of a few hours**. However, KFAG will supply analysis of the EA's actual 15-minute data to contest the conclusions in the report.
- **We submit that the Licence should insist on the upgrade/replacement of the USVs** giving far wider opportunities for satisfactory flows to be more reliably achieved in the near future, rather than UU's proposals to found future regimes on less than environmentally optimal flows on the basis that they are inadequate but achievable with UU's current infrastructure; further whilst acknowledging interventions will also be also necessary.
- The report is limited to detailed analysis of flow rates and impacts within St John's Beck (SJB) **with no full acknowledgement of the risks to the wider Greta system from changing to an overspill system combined with peak catchment flows – including impacts on fish passage and the increased risk of pollution for Bassenthwaite as a SSSI.**

1 A Fair and Transparent Consultation:

"We can't take account of comments that are not about these specific applications, including:

- *General opinion on water company efficiency or operations*
- *Changes to flood risk from UU stopping their flood management regime"* page 2 EA Licence Renewal Application notice

It seems that the email sent on 9 January 2026 regarding the licence application for Thirlmere has been deliberately written in a specific way to totally prohibit any comments on UU's flood management releases and yet the FDD is repeatedly referenced. As these flows have been part of UU's operating procedure – and our river flows - for 15 years, **we fail to see how UU have been presenting the FDD as an impasse to their licence renewal, unless it is solely based on the Ricardo report which, we will argue, is unsuitable to make that conclusion. The FDD has been ongoing since 2010 throughout previous licence applications with no issues.** UU confirmed at a meeting on 29/1/26 that their Water Management Plan includes the KFAG releases and that, in the last 10 years whilst the KFAG release regime has operated, there have been no significant drought measures needed.

These documents repeatedly refer to the "voluntary agreement KFAG has with UU." However, **there have been EA representatives at every meeting that KFAG has had with UU over the last 20 years so it can hardly claim it has had no input into the current release regime.** The numerous (since staff seem to change every couple of years) EA representatives that we have worked with, repeatedly claim they have no legislative basis for taking any responsibility for any actions. They pass the buck and attempt to avoid responsibility. The EA needs to stand up to UU, using the legislation that they do have for habitats and reservoir safety, to insist UU upgrades the USVs which would provide clear benefits to the quality of flows in SJB, rather than go along with UU's lack of action over infrastructure upgrades resulting in environmentally inadequate releases supported by a "man with a rake" to ensure gravel management.

Ricardo Report Executive Summary: "*United Utilities has confirmed that the current reservoir level based voluntary flood drawdown operating regime releases will be ceased, effective from the date of renewal of the Thirlmere licences, with the aim to replace this with a forecast driven approach to flood releases. United Utilities is committed to working together with the Environment Agency to develop a future forecast driven operating regime of releases for Thirlmere. This regime will be*

developed following the completion of Environment Agency flood modelling. When agreed in the future, this regime should be assessed appropriately under the Habitats Regulations in-combination with the nine Thirlmere abstraction licences and any other relevant plans or projects."

Introduction, page 1: *"It is important to note that UU have confirmed they will cease the current voluntary agreement with the Keswick Flood Action Group to make reservoir level based flood drawdown (FDD) releases from Thirlmere*".

In the 2 sections, exemplified by the above abstracts, UU correctly name KFAG as the group with which UU has the current voluntary agreement, and go on to state that the agreement will end with the renewal of the licences (i.e. 1/4/26) and that UU has confirmed that they will cease the agreement.

In our opinion this directly - and misleadingly - implies that UU had confirmed the above with KFAG. Further, by not stating that KFAG has expressed their concern and disagreement with ending the releases, it incorrectly infers that we do not oppose that position.

Through multiple meetings and correspondence, KFAG have consistently expressed concern over implementation of any forecast driven release scheme prior to thorough discussion, modelling to show its efficacy for flood mitigation, development and agreement of the full procedures, and trialling of them to demonstrate that UU and EA can implement them effectively.

Further, UU had not informed KFAG that they propose to halt the current releases on 1/4/26. In fact, at a technical meeting on 31/7/25 UU told KFAG that an FDR scheme was their preferred option, **but that any new release regime would not be ready to implement before September 2026, with the current releases continuing until it is ready** (meeting notes circulated 6/8/25). KFAG representatives at the meeting expressed concern over this approach (also in the notes). We followed that up with a note emailing on 16/8/25 and again on 18/9/25 fleshing out our concerns.

As the extracts above confirm, after 31/3/26 UU's intention was that there would be no flood mitigation scheme in operation at Thirlmere at all, with just a vague statement about development of a forecast driven scheme in the future. **The implications for the environment are intrinsically linked to any agreement over flows. To withdraw the FDD system risks returning (long-term) to mostly minimal compensation flows with the increased hazard for the natural environment -and flood risk - of excessive, badly timed, uncontrolled reservoir overspills.**

The report is referred to as "Final Issue number 2". We had asked (email dated 18/12/25) that it could be withdrawn, amended and reissued as "Final Issue number 3" in order to make it clear that:

- **KFAG had not been informed or consulted by UU about the withdrawal of the current "KFAG" release scheme from 1/4/26 until the sight of the Environmental Report on 18/12/25.**
- **That KFAG is strongly opposed to its withdrawal before any new scheme is fully discussed, agreed and trialled as detailed above.**
- **That KFAG, whilst initially supportive of concept of forecast driven releases (email train ending 13/5/25), have expressed their concerns to UU multiple times over a solely FDR scheme, and do not support any implementation of the current UU proposals as they have recently been expressed to us.**

For much of the last 10 years in regular meetings that KFAG has had with the EA and UU we have provided quality work on release rates. However, over several years, we have been prevented from having any input into the Optimum Options Group and the future in this licence and forecast regime looks to be decided by UU and the EA without an acknowledgement of KFAG's long term interest in Thirlmere's management. Reports from the Group have not been shared. Whilst we have been told

that benefits or disbenefits of the current release regime are alluded to in those reports, as representatives of a community whose flood risk is intrinsically linked to the reservoir's management, that evidence has been kept from us so advantages/objections cannot be addressed. Key information within the Ricardo report is redacted and, whilst we respect UU's need for protecting their commercial interest, the way this document has come about, and been presented to us, is an insult to the exceptional work that both KFAG's Al Cook and Mark Roberts have done – **voluntarily** to support the Keswick community - over these many years. We would suggest that not many Flood Action Groups have members with the skills to look at hugely detailed, far reaching and clearly very expensive reports and question their validity of purpose.

To prevent comment on flood mitigation releases when they are a key component in the data embedded in the document does not give the reader a fair and balanced view of a possible future for water management. Ricardo Report page 5 states: *The FDD release regime is a voluntary agreement and there is no legal or regulatory requirement for UU to continue to make releases for the purposes of flood mitigation, and therefore, because delivery of the mitigation flows required is infeasible.* There may not be a legal or regulatory requirement to make the FDD releases but there is clearly a moral one. We are prevented from expressing our concerns over abandoning actions which have been demonstrably able to reduce flood risk, and can have beneficial environmental impacts. The alternative presented is **possibly** relying on some form of forecasting system for managing peak flows. This is based on unreliable rainfall forecasts (particularly when reliable data is ideally needed for action several days in advance) in a mountainous area with complex microclimates, whilst the decision-making processes and the ability to actually safely instigate releases in storm conditions are not agreed and the management of out of office hours actions remain unclear. However, we can list the impacts on the environment, and the contamination risk by deliberately managing the reservoir to overspill at times when the full catchment is in high flows.

The reservoir is 100% a managed environment. We refuse to accept UU's view that uncontrolled overspill is an "Act of God". Everything is a choice. Actions as well as inactions are impactful. UU either choose to keep so much water in the reservoir that they allow it to overspill excessively, being fully aware of the consequences, or they choose to manage Thirlmere for an optimal balance for water supply, habitat requirements and flood risk. The EA needs to fully step up to their responsibilities as a Flood Risk Management Authority and take a full account of the environmental impacts of flooding for a more balanced view of Thirlmere's management.

As owners, commissioners and funders of the Ricardo report, it is written clearly with a bias towards UU. He who pays the piper calls the tune. We question the honesty of including statements that guide towards accepting "best efforts":

- *Page 34 UU do not have the infrastructure capabilities to release Small Flood Flow magnitude flows from Thirlmere. It may be possible in the future to make larger releases from Thirlmere but this would require significant investment.* We present arguments below as to why the upper scour valves should have been made fit for purpose years ago and that they are being examined with a view to upgrade/replacement.
- *Page 35 It would be sensible to include a condition to stipulate that the maximum achievable rate based on reservoir head when the lower scour valves are opened to their safe operating limit is the suitable rate for this release.* By failing to recognise that the upper valves are being examined, the report does not provide the opportunity to acknowledge or discuss their opportunity to provide what we consider to be the best option for the environment and our community.
- The table on page 37 settles for a maximum achievable rate based on reservoir head. Everything is written to fit in with the limits of UU's current infrastructure.

UU are trying to propose creating near natural flows in St John's Beck (SJB) by virtue of reservoir overflows. However, the difficulty with this approach is the reservoir itself. Because of the 3.25^2km surface area of the reservoir all rainfall is attenuated before it reaches SJB via the spill weir. This means that greater rainfall is needed to produce an effect. All rates of rise in SJB are smoother than in a natural watercourse and the decline in flows is slower. It is, and always will be, excessively engineered and we would suggest that the Ricardo study is fundamentally flawed in not recognizing this, by attempting to create flows that are always unrealistic by virtue of the reservoir attenuation.

2 Data Presentation and Analysis.

We set out below our evidence that decisions have been made on, what we believe to be, perceived environmental impacts, from skewed (by virtue of using averaged daily flows) data. We can demonstrate what we adjudge to be the benefits of the "KFAG releases" since they were agreed and started in 2010 (not 2008 as the document claims) after UU's recognition of the reservoir's impact in the 2009 floods. **That is not to say we remain doggedly focussed on them, just that this regime has to stay in place until a further agreement is reached which pragmatically balances flood risk, water supply and can guarantee/improve flows for habitat needs.**

To understand the current situation, when the releases of ~120 Ml/d came about initially in 2010 UU's intention was to trial 750 Ml/d releases to provide storm space. 15 years (and very many joint meetings) later we still have no further change in those releases, with delays due to the TTS, modelling, construction delays etc. The 120Ml/d we've been living with (brought about through meetings with our then MP, Dale Campbell-Savours, after the 2009 floods) was never a mathematically optimum flow for all concerned. It was merely the maximum flow UU could release from the lower valves without flooding their electrical housing and walkway back in 2010. UU's ability to satisfy all the habitats requirements has now been much improved since the upgrade of the lower scour valves.

We trust that understanding the years of delay and procrastination puts into perspective our insistence that any new release regime has to be fully tested and agreed before changes to the reservoir's management are made. On past performance it could be many years before a workable alternative can be actioned.

By changing the current release regime UU's proposals do not explain how long the environment may have to endure the impacts of minimal compensation flows before an improved FDR is agreed. As a recent example of the time it may take before an improved FDR to be actioned, and the considerations that need to be addressed before any different release regime could be implemented, **UU's response (refusal) to our request for a trial pre-storm release before storm Claudia on 10 December 2025 lists:**

- Firstly, the full operational procedure needs to be properly thought through in detail, agreed and documented. This includes clarity on decision making, H&S risks, communications and responsibilities during both normal and storm conditions.
- Secondly, all relevant landowners must be formally signed up to the approach, and there will also need to be clear and proactive communication with all landowners affected by any proposed releases.
- From a regulatory perspective, it is essential that the Environment Agency clearly specify how much water they expect us to release and when. We are not a flood authority and have zero expertise in doing this, therefore we do not know how much we should or shouldn't release (If we get this slightly wrong we are very used to getting significant legal challenges). I would not be able to secure Executive approval for storm condition releases of up to 600 Ml/d (Especially whilst spilling) without clear guidance from the EA.

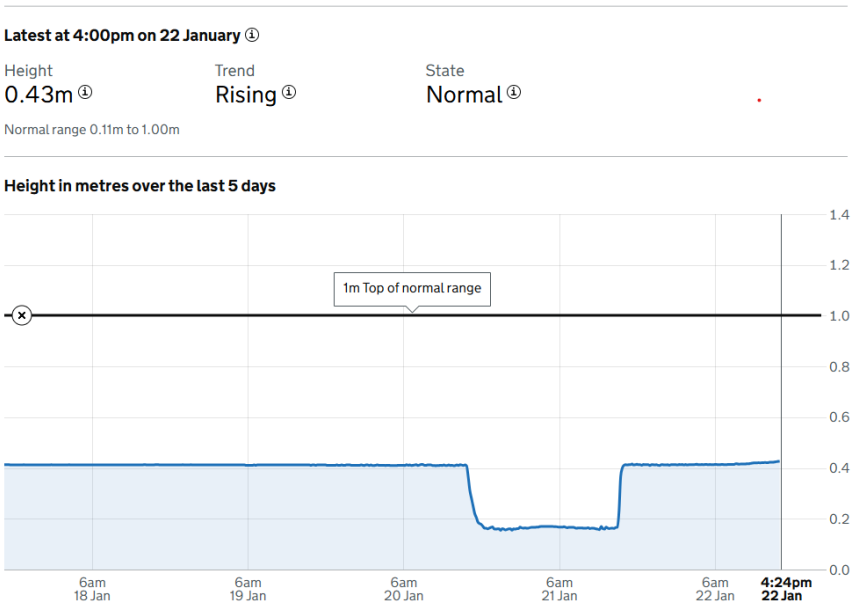
One of our key sticking points with regard to UU agreeing increased releases in the past has been their understandable reluctance to make releases for fear of litigation from the EA and others. UU have repeatedly said that they need to be instructed to make the releases to protect themselves from fines. UU consider "bank full" in SJB at 600Ml/d. The EA's modelling is to include scenarios where releases should be made when the reservoir is already overspilling, something in particular with which UU have never been comfortable. That, in itself is likely to be a major hurdle to overcome. 15 years of negotiations so far has produced no more than a blank refusal from UU to do so.

We do not take issue with the need for varied and higher flows and a lot of the work KFAG has done over the last 20 years has been with that in mind. The main objection is over the timing of those high flows, that they do not coincide with peak flows in the rest of the catchment and do not put our community – or indeed the environment - under too much stress. With the upgrade of the 2 lower scour valves UU are able to release higher flows, enhanced by the addition of a possible 50Ml/d from the Mill Gill diversion. However, these are inadequate for the flows the Section 20 demands. **Time and again, there are concessions suggested over accepting what is currently possible – and also recognised as, at times, unreliable and inadequate - playing into the hands of a water company that has failed to maintain all its infrastructure in a usable state.**

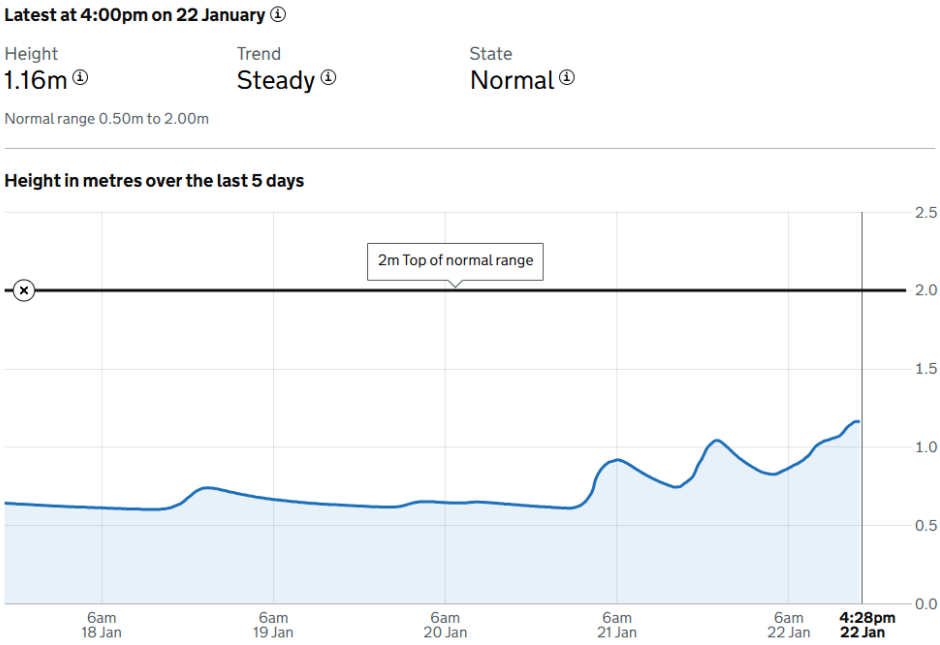
The point here is that KFAG have always maintained that the additional releases should be used in a way which benefits the environment meanwhile avoiding putting water resources at greater risk. The priority is storm space NOT how it is achieved, so we have always been open to varied flows during FDD release periods, so long as the general total for a period equates to at least the 120 Ml/d, as we recognise how artificial static flows are for wildlife. The EA accepts that prolonged higher flows are better for the environment (primarily the fish) rather than short peaks of high flows. The graph for SJB goes from a very low flat line to a shift up to a steady line at around the 40cm mark when the "trigger level" is reached. There is no variation. It provides an unnatural flow for a mountain river.

https://check-for-flooding.service.gov.uk/station/5139

SJB showing the current situation with unnatural flow releases



The Glenderamakin over the same period for comparison



Despite these last few years when UU has had the infrastructure to be able to make higher flows **there has not been one occasion when all those who are supposed to have the best interests of the environment and the river systems (EA/NE/WCRT/UU) has arranged for a varied regime**. We doubt they have even considered negotiating one, despite our suggesting it repeatedly. **What does THAT actually say for genuine concerns about habitats?**

The work that KFAG's Mark Roberts has done, accompanying this submission, sets out an open argument. It presents benefits and disbenefits from January 2015 to October 2025 and accepts UU's reluctance to make additional releases when the reservoir overflows. It compares: No Releases: baseline releases as the current operating procedure with the KFAG releases in play; and potential uses of 600Ml/d and 1500Ml/d both in 1m and .5m trigger level circumstances. **It proves that if the USVs are in play, and UU is willing to makes releases of up to 1500Ml/d, then it can achieve the flows demanded by the Section 20 and the Environmental Report.** It clearly indicates, by using the actual data, provided by the EA, of 15-minute flows over the last 11 years that flow rates at the SJB gauge of above 1750Ml/d were achieved on 20 occasions (including 14/11/25 event, just beyond the original dataset used). **This completely refutes UU's daily data model which suggests (below) that, even with the removal of the KFAG releases (which actually comprise only between 7-8% of the annual overspill volumes), UU would be able to achieve these flow rates in less than 1 in 3 years!**

Ricardo report Page 32 ***It is also likely to result in reservoir spills coinciding with natural periods of rainfall and wet weather***, *The assessment scenario of a like for like abstraction licence renewal including the cessation of the FDD would restore spills of over 1,750 Ml/d to just over a third of modelled water resources years, however not necessarily on a once every three-year basis (as required in the current Section 20 agreement (July 2021)).* ***The reference scenario (i.e. no FDD, no TTS) also fails to result in a spill event of this magnitude on a once every three years basis.***

We would suggest that the money spent on UU's lengthy submission was wasted as it does not provide the data to assess the environmental flows requirements as set out in the S20. KFAG's Mark Robert's work as submitted with this report shows that:

1. There is nothing in the data record from 2015 to 2025 that substantiates UU's claim that the KFAG releases have had a detrimental effect for SJB.
2. With the USVs available there are options which can meet the S20 and environment reports.
3. Although, through the KFAG releases, peak flows are both lower and less frequent (as is its intention) the catchment still had 19 occasions where release over 1750Ml/d had been achieved in direct contrast to the Ricardo report's conclusions.

We would like to see the EA's work as it should show similar conclusions.

3 Structural Opportunities if the Upper Valves are fully usable.

Upgrading or replacing the USVs would make it possible to provide greater flexibility:

1. Guarantee that sufficient flows for habitat/fish passage could be done at the appropriate times. Proposals in this document do not achieve that outcome.
2. Allow peak flows for flood risk management to occur disconnected from high flows in the rest of the catchment reducing pollution risks, unnecessary erosion, increased flood risk
3. End the outrageous situation where safety valves cannot be used except in blind tests with only a small flow of water between the valves released*

*In the response (concluding remarks 6 of the Supporting Information) UU states:
Scour Valve Testing: This relates to the testing of the reservoir safety infrastructure in line with the statutory reservoir safety requirements. The volume of water released during scour tests is small and will not impact on spill frequency. It should be noted that the USVs at Thirlmere are currently tested "blind" i.e. the valves are in line and exercised in turn, so only the small Volume of water between the valves is released." All well and good for not risking environmental impacts but what does that say for the acceptance that safety valves cannot risk being trialled for use as they were intended? We have been told by UU that they cannot risk fully opening the USVs (a purpose for which they were installed as a reservoir emergency drawdown measure) for fear they cannot close them again!

It seems realistic to expect that UU will have to take action on the USVs. For many years we have flagged up concerns over UU's inability to be able to use them on the grounds of safety. Possibly more serious than our opinion on the EA's inactions over flood risk management, is our view that the EA, having overall responsibility for reservoir safety, has seemingly put no pressure on UU over all that time to ensure that these original, Victorian, valves should be in full working order. Surely, considering a Category A reservoir designed and constructed when Probable Maximum Precipitation (PMPs) were far less than Climate Change forecasts now estimate, should have had a recommendation – or even a Measures in Interest of Safety (MIOS) issued - to ensure all valves are in proper working order?

The EA has taken over the responsibilities of the NW Regional flood defence bylaws which seems to double their duty to ensure the reservoir's valves are operationally reliable. We question if the valves current condition contravenes bylaws for them to be required to be in a proper state of affairs and efficiency, so that they can be used in *accordance with such reasonable directions as may from time to time* ***for the prevention of flooding***. See link, section 2 *Maintenance and operation of structures and appliances*

https://www.gov.uk/government/publications/regional-flood-defence-and-land-drainage-byelaws/north-west-region-flood-defence-and-land-drainage-byelaws

Furthermore, the government's new Water Infrastructure Reforms proposes a new regulator, an end to water companies marking their own homework and a focus on infrastructure being fit for purpose **including the efficacy of their infrastructure.** There is also new Reservoir Safety Reform Program

about to go out for public consultation. It follows the recommendations of the Independent Reservoir Safety Report (as a result of Prof Balmforth's work in The Toddbrook Enquiry). Taken together, we would suggest that, very soon, it will be highly likely that the EA will be forced to abandon their complacency and be obliged to take reservoir safety much more seriously. **We believe that those considering this licence application should add an insistence that UU upgrade the valves within a specific timeframe to give the opportunity for a wider range flows rather than being yet another authority which does not stand up to UU. Operational USVs will give UU flexibility. Overflows will not be the only opportunity for high flows; medium and small flood flows can almost be guaranteed to be achieved at the correct times of the year to satisfy the needs of the environment/habitats.**

We have been advised that UU have commissioned a firm, Blackhall, to look at the upper valves upgrade or replacement (online meeting 6/1/26). Thus, it seems pragmatic and wholly reasonable for us to suggest that **the time to change flow regimes is when this work has been achieved and all parties, UU, EA, NE, KFAG can have a better understanding of what can be possible for us all. Now is not the time to withdraw the flow management regime which we have been able to rely on for 15 years**. We remain open to some hybrid form of release system but we will not quietly accept the abolition of the current regime without an agreed alternative.

4 Impacts of potentially returning to minimal compensation flows/overspills on the full catchment, community, pollution:

The Mill Gill diversion, lauded for the health of Howe Beck, came about through KFAG's negotiations, because UU were trying to increase their releases to provide storm space during the period whilst we were waiting for the lower scour valves to be upgraded (delayed due to UU's planning for the West Coast Pipe Transfer (TTS). Recent reports in the local newspaper say that UU and the Rivers Trust are reporting success with natural work on Howe Beck where they have varied the flow in the beck and seen good fish results. **They can do this because the sluice gates on Helvellyn Gill and the Mill Gill Aqueduct are COMPARABLE to the size of Howe Beck for the creation of a realistic flow.**

If the LSVs and USVs were available at the reservoir the situation would be similar to Howe Beck where near realistic natural flows could be created WITHOUT the attenuation factor of 3.25^{2}km of the reservoir.

The salmon largely benefit from the "KFAG releases" through the autumn months. In fact, the 100 Ml/d flows which the salmon are allowed for an 8-week period for spawning from mid-October have been enhanced by the current regime of daily "KFAG releases". This can be evidenced by UU being required to keep the flows through December 2016 despite the trigger levels not being achieved, specifically for the salmon's benefit.

Supporting Information 3d) "*It should be considered that the prolonged flow elevation from the KFAG releases may result in fish spawning in gravel areas which are exposed when the KFAG releases are stopped (i.e. when the release trigger level is reached). This is considered to be a negative effect and was referenced in the 2021 Apem report"*.

We completely refute the suggestion that, with the cessation of these higher flows through trigger levels no longer being reached, the edges of the watercourse were drying out. **The "KFAG releases" are completely contained within the banks of SJB**. Any such occurrence with the KFAG releases would be isolated and not a major difficulty. Even if they were not, the impact on the beck could not be as significant for the fish as the risks of the greater spate releases proposed over shorter periods. During each recent flood, fish lay abandoned in fields as the water receded, has this been

accounted for as an issue in assessments of significant overspill events? Floods destroy more than people's homes.

Whilst there has been a serious consideration of the SJB watercourse, which is mostly a very narrow beck, there appears to have been no focus on how essential additional flows may be for adult fish to reach upstream to SJB. Some sections of the River Greta are now much wider due to excessive bank erosion and so choked with boulders from the collapse of the boulder clay during and after Storm Desmond (particularly in the reach downstream of Low Briery and between the upper and lower Fitz Parks where the deep pool, once full of migrating salmon, below Knights Bridge has been filled). Despite the river being recently greatly widened in several reaches there seems to be no assessment as to whether the flows from the Glenderamakin, with minimal flows from Thirlmere, can provide a good enough channel for larger fish to navigate. As a popular area for canoeists navigating these stretches also require reasonable flows.

The Ricardo report, and the EA response, seems to completely disregard Climate Change. These days the EA likes to appear much more concerned about its impact on climate change with each project they undertake, assessing its carbon footprint and so on. Moving to a regime where flood risk increases, goes beyond the risks of pollution and habitat in the immediate vicinity of the reservoir dam. Any alteration in flows which is known to add pressure on the environment at times of high rainfall should also include an acknowledgement/assessment of the environmental impact on landfill from flooded homes, the replacement of white goods, the effect on carbon emissions from heaters heating empty damp properties and dehumidifiers running 24:7 to dry homes.

As a Flood Action Group, we have always tried to work in a full-catchment approach, avoiding passing problems on downstream. To try to achieve overspill events when the entire catchment may be in flood increases the possibility of overwhelming Keswick's sewage system (constructed in 2012 to a mere 1:30 year return period – and that probability has no doubt increased with climate change forecasts). The bifurcation chamber downstream of Greta Bridge, more or less behind the Premier Inn, is unsealed. **High flows flood the field, the sewage swills out polluting the watercourse above Bassenthwaite Lake and its SSSI status, leaving toilet paper in the hedges** and Keswick School's rugby pitch and playing fields contaminated by foul water. The EA needs to show it has fully taken account of the harmful effects on human health from flood flows, alongside the social and economic welfare of communities.

Storm Desmond (5/12/15) resulted in 515 properties in Keswick alone being flooded and residents went months without supermarket facilities as both Booths and the Co-Op were flood damaged. It also caused significant areas of natural woodland to be lost due to excessively high flows. The gorge and the scarp slopes below the A66 remain fragile, their further collapse could have serious consequences for properties upstream of Keswick – and for the future of the A66 itself. We understand that UU recognised this vulnerability when they had to spend an extra ~£10million on re-routing the pipeline for the TTS via the Castlerigg area rather than use the route beside the A66. Clearly, if UU is expected to satisfy environmental releases exclusively through allowing high flows at a time when the entire catchment is in flood conditions, it then exacerbates flood risk and the environmental impacts which result from flooding. **No account appears to have been taken of these risks.** In the upper reaches there was significant loss of farm stock, damaged boulder-strewn fields, walls and fences destroyed. The river was black water, contaminated with both animal and human faeces, petrol and diesel. The high flows in the Low Briery Gorge section caused excessive erosion and landslides resulting in further damage to water quality alongside the loss of considerable areas of natural woodland. Bridge structures were damaged or completely dislodged, the historic two packhorse bridges nearer Keswick became temporary dams as caravans and associated debris got lodged causing hazardous water surges, and thus a risk to life, as each eventually succumbed to unprecedented high flows.

Keswick's Fitz Park area, being the first area in town impacted by high river flows is at much greater risk if peak river flows are not managed. We understand that the EA were considering that a flood mitigation release might not be considered until a forecast of 4.2m at Greta Bridge is expected. This would mean the releases were only done at extreme events and we suspect UU may never actually implement an FDR as conditions would be dangerous and UU will find good HSE reasons to be unable to do it. Damage to the public parks area with its tennis courts, football pitches, cricket ground, bowling greens puts pressure on town and council finances. (For reference, the EA has a trigger of Greta Bridge at 3.95m to consider the Penrith Rd area flood warning to go out and the river can rise by 10cm or 15cm in 15 minutes. Since 2000 there have been only 5 occasions when 4.2m at Greta Bridge has been reached; 3 of those were major floods plus 22/12/15 and Storm Ciara). KFAG would also point out that the intended 1:75 protection from the river defences (constructed in 2012) has also been significantly downgraded in recent years.

This is a tourist area with World Heritage status and adverse publicity damages business. The cost to the economy from adverse publicity over many months, the impact on mental health and well-being of local people is also relevant. With the Tour de France planned for summer 2027 is a winter ahead with no planned and agreed flood risk mitigation measures ready REALLY a good idea?

Conclusions:

1. The Licence Agreement should require UU to upgrade or replace the upper scour valves to give much greater options for making higher releases; in particular medium and small flood flows can almost be guaranteed to be achieved at the correct times of the year to satisfy Section 20 requirements.
2. The data and its analysis presented in the Ricardo report is not suitable to answer the questions regarding the flow regimes needed to satisfy the habitat requirements
3. Overflows should not be used as the only opportunity for high flows because the impact on the wider catchment beyond SJB (including exacerbating pollution risks to Bassenthwaite Lake as a SSSI) of releases at times when the full catchment is in spate have not been fully acknowledged or examined.
4. Aside from the cost, health risks and misery to the Keswick Community from flooding, on environmental grounds the current "KFAG releases" should be continued until there is a fully discussed, agreed, and trialled replacement procedure which satisfies optimum requirements for habitats.

Lynne Jones MBE
Chair Keswick Flood Action Group
Abbotsway,
Eleventrees
Keswick
CA12 4LW
Email:lynnejones42@gmail.com
Tel: 017687 74075