

# The Hogsmill in January 2023

Yet another rapid turnaround in conditions along the Hogsmill over the past month, with the river going from a surging torrent to a frosty calm while the meadows went from wetlands to ice rinks.



Sheephouse Way

Tolworth Court Farm Fields

The resident geese looked to be in their element with more water around, though other birds were going around “two-by-two” perhaps concerned there could be a need for an Ark!

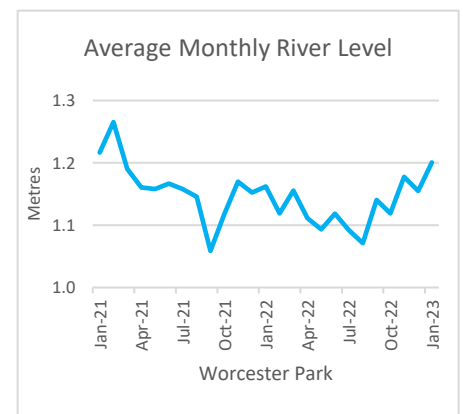
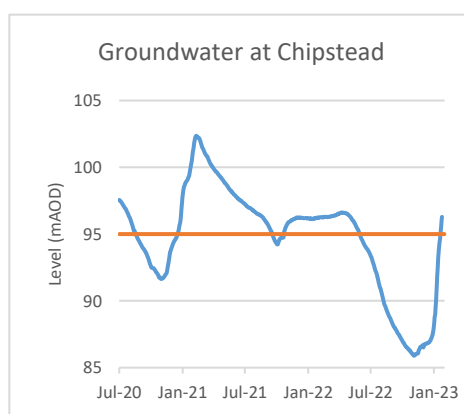
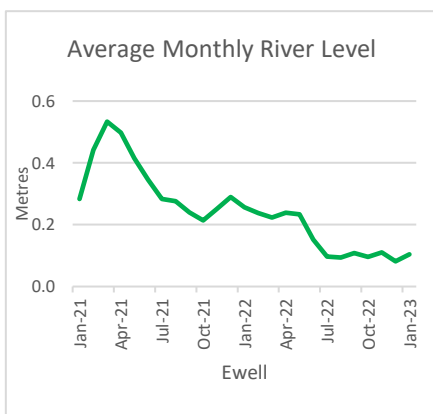


This newsletter looks at what is happening to the natural world along the Hogsmill, including the problems it faces and volunteer activities to monitor and restore its habitat, working with the South East Rivers Trust (SERT) and other local groups and alongside the Environment Agency (EA) and local water companies. This month the rather disappointing results from last year’s riverfly monitoring are also reviewed.

## The Hogsmill in January

With a typical month's rainfall in the first half of January and heavy rain in late December, the Hogsmill had 6 inches of rain in around a month. But the effect on the upper stretches of the river was short-lived and the water level was again quite low by the time of our surveys later in the month. The autumn rains have though at last had an impact on the aquifer, with the water level rising steeply in January and topping 95 metres, usually the "trigger" for the springs to flow, so hopefully there'll be an improvement soon.

The impact was greater downstream; and one wet spell triggered a large surge of "brown water" down the Bonesgate, though this was the first notable one of the winter, an improvement on recent years. But even here the level dropped back again after a few dry days.



Green Lanes Ewell



Bonesgate confluence



Berrylands Bridge

There has been a pause in most volunteer activities along the Hogsmill this month. But once the frost hardened the "muddy morass" along much of the bankside, it has been a great time for exploring the delights along the Hogsmill corridor, such as the relics of its mill history and its natural wonders: the sparkling meadows; the magnificent trees, both living and dead, with their amazing sculptures; and even early signs of new life with catkins everywhere, perhaps tricked by mild weather.





Mill Wheel Bourne Hall



Lower Mill Ewell



Packhorse Bridge



Long Meadow



Tolworth Court Farm



Six Acre Meadow



Ewell

It's been a story of two parts for pollution over the past month. Early on with all the rain it was all about storm overflows with Thames Water's new "real-time" map highlighting what was happening. Just before Christmas an intense storm caused the highest water "surge" down the river in 2022 and there were spills at all 4 of the Hogsmill's storm overflows: Epsom and Ewell Storm Tanks, Hogsmill STW and St James' Road in Kingston. The rain in January, though substantial, was much less intense but it still led to multiple overflows at the STW: these were recorded on 7 days for a total duration of about 50 hours, though "teething problems" with the sensors may mean these figures are not entirely accurate.

But after just a few dry days it changed with signs of "ordinary" pollution appearing at many outfalls; these were mostly mild but quite widespread. Then near the end of the month there was what looked quite a large oil spill along the Green Lanes Stream, the signs of which were visible as far downstream as the Stepping Stones though these had largely dispersed by the time the (unfriendly) TW team arrived to check!



A240 Upstream



Hogsmill "Tavern"



King Charles Road



Ewell Stepping Stones

If you see pollution in the river or indications of possible pollution, such as dying fish, please call the EA Hotline: 0800 80 70 60, and ideally take a photo. You can also contact Thames Water on: 0800 316 9800 (option 2); on: [www.thameswater.co.uk/help/emergencies/pollution](http://www.thameswater.co.uk/help/emergencies/pollution); or on twitter: [@thameswater](https://twitter.com/thameswater).

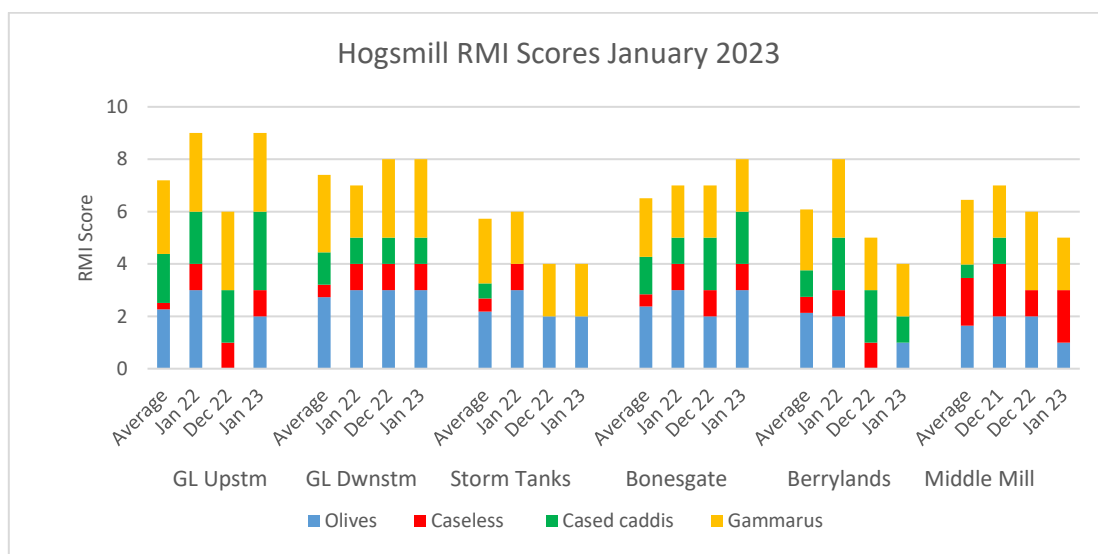
## Hogsmill RMI in January

The River Monitoring Initiative (RMI) is a national scheme that uses “scores” based on counts of a few “water quality sensitive” invertebrates collected in net samples to assess river health.

The 6 main-river sites were surveyed between January 19<sup>th</sup> and 21<sup>st</sup>, all in cold water and air conditions so there were plenty of entrants for our “best winter hat competition”!



Results were highly variable with vibrant trays and good/improved counts and/or scores at 3 sites, but low ones at the other 3, including 2 breaches of the “trigger” score for reporting to EA, more than in all of 2022. 2 of the poor sites were downstream, but there was no clear pattern or obvious reasons for the diversity:



- Results at the Green Lane Stream sites were at the “good end” with scores of “9” and “8”. Particularly notable was the count of 100+ mostly large and active cased caddis upstream. We normally have a spike in numbers here in the spring but not this early; perhaps the extremes in temperature with some unusually mild spells have upset their life-cycles. Olive and gammarus numbers were also up markedly. Although river conditions did not appear much different from recent months, perhaps the improvement reflects a recovery at last from the impact of the summer drought;



- The “8” at Bonesgate was the best score since last March, again with a big jump in olive numbers so this could also be a drought recovery. The good result was perhaps surprising as this site had been hit by the surge of brown water down the Bonesgate a few days earlier, though this may have had some impact as the count in the part of the sample collected nearest to the Stream was low;
- The “bad” results were at Ewell Storm Tanks, where there was another breach, and Middle Mill, where a breach was just avoided as caseless caddis numbers revived. The first is not surprising as scores have been around “4” for several months, with tiny numbers of caddis often just pushing them up slightly. The results at Middle Mill *could* have been affected by recent storm overflows at the STW, though the spillage should have been heavily diluted by flows of “treated” effluent. January has in the past been a particularly low scoring month here so it could just be seasonal;
- The “ugly” was Berrylands where the “4” was a breach, the lowest score here since 2018 and a large drop from the “9” at this time last year. The most numerous species was pollution-tolerant hoglice. There were no signs of pollution, though recent rain had produced some large surges down the Tolworth Brook which could have contained “nasties”. But the origins of the poor result look to have been further back, as counts were only slightly better in the previous 2 months;
- There was considerable variation in the levels and changes in counts of individual species this month, but overall the number of all 4 species recorded was up by a third from December and the highest since July. The stars of the show were the large and active cased caddis, some of which wriggled so much that they came out of their cases!



## The Hogsmill in 2022

The Hogsmill took a battering from the elements last year as the results of climate change became increasingly clear. After 2 relatively wet years, rain up to the end of summer was only two-thirds of the long-term average, though the wet autumn reduced the deficit somewhat.

As a result, the water level and flow fell all along the Hogsmill in 2022. The biggest effect was upstream where the level dropped sharply from May onwards when the springs dried up and remained low, as water in the aquifer fell below the “trigger level” and stayed a long way below for the rest of the year. But while

the river level was well down on 2021, at no point did it fall to the very low values of the late 2010s despite the dry summer being more severe, so perhaps the extra “top-up pipe” installed in 2019 has had an impact.

The water level also fell along the lower stretches of the river, though by much less. The water flow down the tributaries held up surprisingly well during the dry summer and helped produce a rapid recovery in levels along the middle stretches once the autumn rains had arrived. Also of potential importance is that there was much less variability in the water level than in recent years: on only 3 occasions, all in November or December, did the water reach over 1.5 metres in depth at Worcester Park compared to 17 such water “surges” in 2021. With the continuing large, and presumably fairly stable, input of treated effluent from the STW, the water level at Kingston also fell by much less than further upstream.



After the disruptions in 2020 and 2021, we managed an almost complete set of monthly RMI surveys at the 6 main-river sites in 2022 bringing the total across all Hogsmill sites to almost 600 and with the 4 original sites where monitoring began in 2014 approaching – and in the case of Berrylands reaching – 100 surveys.

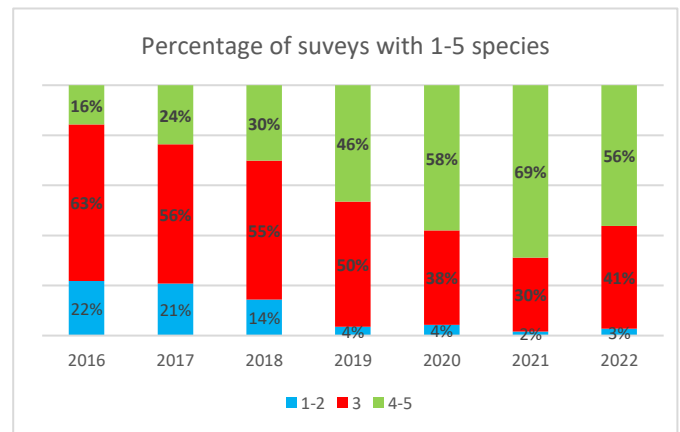
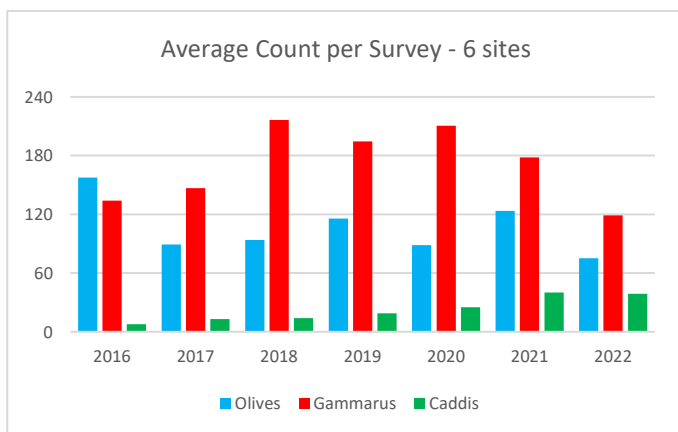
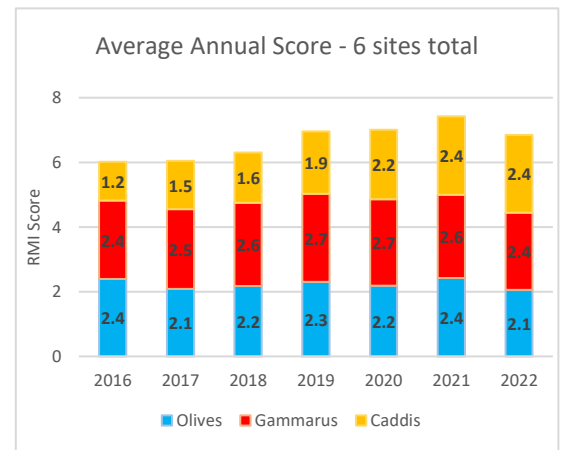
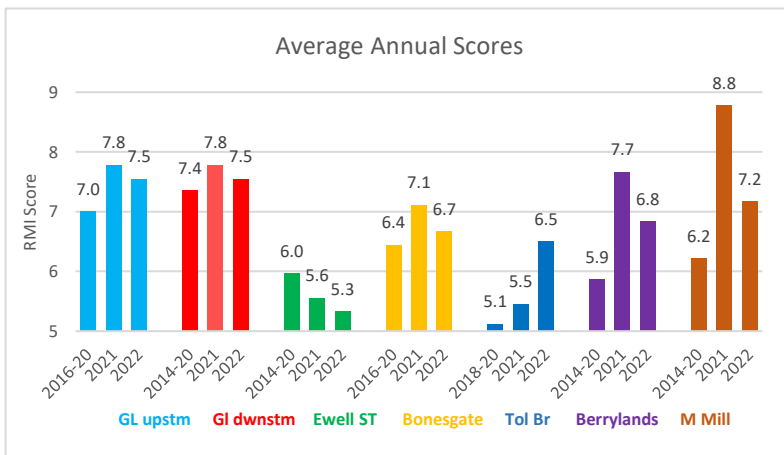
With the weather and rivers conditions, it is not surprising that RMI results worsened in 2022:

- Average scores fell at all 6 main river sites compared to 2021, ending a period of gradual but steady improvements for the river as a whole stretching back to 2016. The largest falls were downstream, rather surprising as the drop in water levels was smallest there. The average was up at the Tolworth Brook site, but this was based on only 2 surveys so it may not be significant;

- There was a particularly large drop in **abundance** with the average number of invertebrates counted per sample down by one-third from 2021 and the lowest total in the 7 years of surveying all 6 sites;
- There was also less **diversity** with fewer surveys where all 4 of the “usual” species were found, though this change was less marked and over a half of the surveys found a “full house”.

But it was not all bad news:

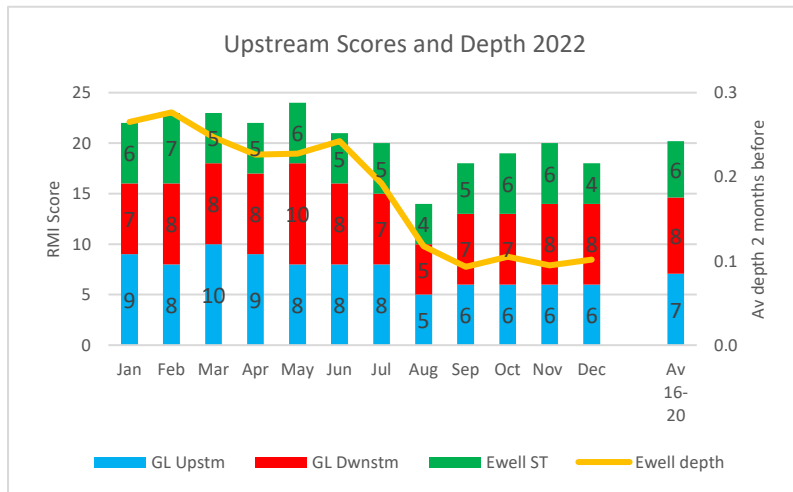
- Only 1 score was below the “trigger” for reporting to EA, though there were some “near misses”;
- The one group for which the average score held up in 2022 was caddis; the cased caddis count was the highest since monitoring began. Caddis are particularly sensitive to water quality;
- Average scores for the year as a whole were still above the levels seen in the years up to 2020 at all sites apart from Ewell Storm Tanks, though this reflected results in the first part of the year; average scores from August onwards were down on earlier years at all sites apart from Middle Mill.



There are no indications that the worsening was the result of more **pollution** entering the river; if anything the reverse. With fewer large water “surges” there should have been fewer sewage spills from storm outfalls and fewer large bursts of road run-off from others; and we are not aware of any major pollution incidents and at least the visual appearance of most outfalls was generally better than previous years.

In previous years changes in **river levels and flows** were often followed after a couple of months by changes in scores, a result that has been confirmed by a recent study <sup>1</sup>, and this was again the case in 2022. This *could* be partly coincidental, for example if life-cycle “lows” in numbers happened to correspond with usual low water times, though there doesn’t seem to be a seasonal pattern to most of the results. It seems more likely that there was a “real” impact with the amount and flow of water affecting its quality through, for example, changing oxygen content or the rate of dispersal of “nasties”.

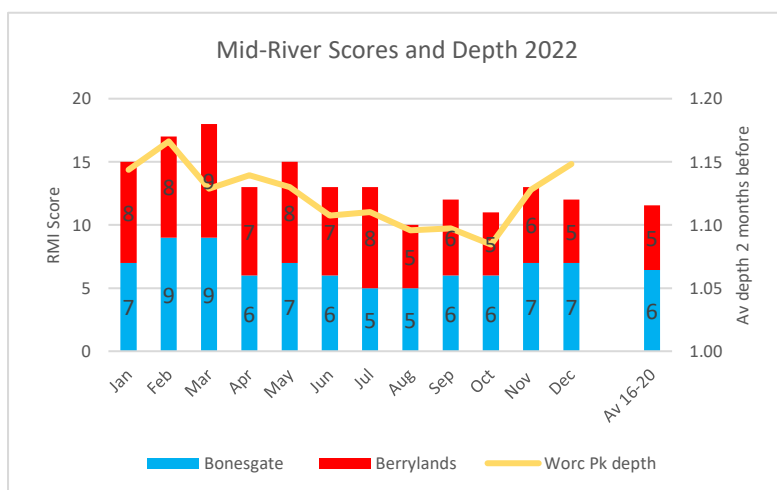
At the upstream sites where the fall in water level was most marked, there was a very large drop in scores in August. They recovered quickly, albeit only partly, even though the water level remained low at the top



end of the river. Part of the reason may be that summer restoration work at the Ewell Ponds resulted in large day-to-day fluctuations in the flow of water into the river, which could have led to a temporary “hit” to scores. RMI scores also exaggerated the recovery in some respects: the total invertebrate count per survey from August onwards was only one-third of that earlier in

the year. The recovery was also smallest at the upstream site; the water level at those below the confluence would have improved as the wet autumn boosted flows down the Green Lanes Stream.

At the mid-river sites, there was a smaller and more gradual decline in water level and this was again followed a couple of months later by falls in the scores at Bonesgate and Berrylands. There was some



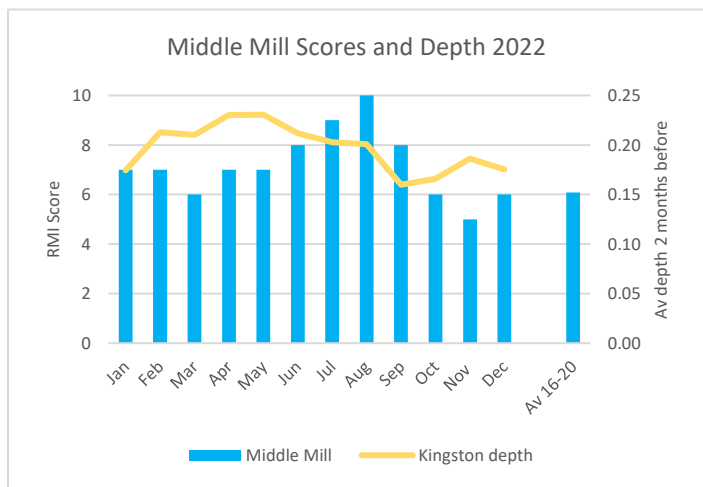
recovery when the water level perked up towards the end of the year, though this was mainly at Bonesgate. The long run of low scores at Berrylands is surprising as the site usually has a moderate depth and flow of water even in dry conditions. The low scores were in line with experience in the late 2010s, but since then there had been a big improvement in results. One suggestion was

<sup>1</sup> Esther Pye in her recent Degree Thesis found a statistically significant association between the number of invertebrates found in RMI surveys at the 4 upstream Hogsmill sites and the average depth of the water 2 months earlier over the period 2018-20.



that this was linked to better water quality in the Tolworth Brook following the major restoration work, but from the 2 surveys on the Brook last year it doesn't appear that this worsened in 2022.

As before, the pattern of results at Middle Mill was rather different from the other sites. This is the only one with marked seasonal variations in scores, in all past years rising in the summer and falling back in the winter;



the reason is not clear, but it *could* be linked to large differences in weed cover over the year. 2022 was no exception so the association with falling water levels was much less obvious than elsewhere. But scores did fall particularly sharply in the autumn, and the drop for the year as a whole was the largest of all sites. Like Berrylands, scores at Middle Mill in late 2022 were running at around the average levels of the late 2010s, ending for now the big

improvements seen since then. What lies behind this is a puzzle, but is part of the fascinating but frustrating world of Hogsmill river monitoring!