The Mystery of the Murky Rhee

Identifying the causes of the shocking increase in the turbidity of the River Rhee

Near Haslingfield in 1996

Near Haslingfield in 2026

Anne Miller, Mike Foley

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Contents

Introduction

The source of the Cam is a beautiful crystal clear Chalk Stream that emerges from the chalk at Ashwell, initially as the river Rhee. It joins the river Granta/Essex Cam just downstream Haslingfield and becomes the River Cam. However, within a few kilometres of the source, the Rhee is as turbid as milk, and this turbidity seems to be affecting the Rhee and Cam for up to 40km downstream. This is a puzzle, as it is very much more turbid than other local rivers, and the turbidity has deteriorated dramatically in the last 20 years.

Ashwell Springs, the Source of the River Cam

For example, the Ouse at St Ives, The Nene at Thrapston and the River Stour at Sudbury, are all crystal clear, in contrast to the murky Cam. Even the river Granta/Essex Cam, at its confluence with the Rhee, is clearer than the Rhee. This is such a shame, detrimental to the river ecologically, but also a puzzle. Why is the River Cam so much worse than other local rivers?

We are particularly concerned, because our Citizen Science work strongly suggests that this turbidity is also a significant contribution to the poor water quality of the River Cam at Sheep's Green, which has Designated Bathing Water status. This is because the turbid water attenuates UV penetration from sunlight, thus reducing the natural inactivation of E. coli, other bacteria and viruses. We know from CVF's sampling for faecal indicator bacteria, and from Anglian Water's similar but more extensive sampling project in 2022-23, that Haslingfield Sewage works, about 5km upstream of Sheep's Green is a major source. Source apportionment studies are currently underway, looking into the causes of the poor water quality, and Anglian Water have budgeted for significant investment to reduce levels of E.coli at Sheep's Green. If river turbidity remains high and interferes with natural pathogen kill, other methods to reduce health risk to river users need to be introduced, such as UV treatment at the sewage works.

This report discusses the results of our own monitoring, the input from local experts, and our analysis of turbidity and observational data supplied to us by the Environment Agency. It suggests that an unfortunate combination of circumstances is causing the unusually high levels of turbidity in the Rhee and Cam.

We also propose a solution, that could improve water quality, reduce Anglian Water's investment costs, and improve natural habitats.

Summary and conclusions.

Local residents say that River Rhee at Haslingfield used to be crystal clear, and that it started deteriorating about 20 years ago.

The historical data provided to us by the Environment Agency the period1980 -2008 shows that this is indeed true. At its best, the river at Haslingfield would have appeared crystal clear, with turbidity as low as 2 FTU. In contrast today, the turbidity is at best 5 FTU at best during winter months, and a murky 15 FTU in summer.

The primary cause of the turbidity in the upper Rhee appears to be dredging and slubbing-out. This was first done in 1816 and has been carried out frequently since 1972. Most recently, this was carried out by Bluegates Farm, who slubbed-out 3km of the Rhee and a tributary at Ashwell End from 28 January to about 7 February 2026. This caused very significant increases in turbidity (to over 100 FTU). Our monitoring suggested that, because of the fine clay soils, the turbidity extended over 20-25km downstream to Haslingfield, and it took weeks (or more) for the turbidity to settle out. However, the source material remains there to be continually put into suspension.

Some of the fine clay from dredging at Ashwell End will settle out before Haslingfield/ Sheep's Green, but it remains available to be remobilised by any disturbance to the riverbed. It is also important to note that, because the fine clay along the Rhee extends for some distance downstream, additional clay may be eroded from banks more locally, particularly where the vegetation cover has been removed by herbicide, or the riverbed and banks have been damaged by dredging.

Our monitoring since 2022 shows that turbidity in the Ashwell End stretch of the upper Rhee is very high, and sediment in suspension is carried down the Rhee for some considerable distance.

In summer we believe that a major contributor to the problem in the Lower Rhee and Cam is American Signal Crayfish [ASC], mobilising the fine clay by foraging and burrowing into the banks causing erosion. These were introduced to the UK in the 1970s, and they spread rapidly, although evidence discussed in this report suggests that they only spread extensively upstream of Barrington after 2018. They were observed at Wendy by 2022, and the evidence from Environment Agency's data sondes suggests that American Signal Crayfish are now active in summer at the Haslingfield and Malton. As the sonde at Wendy was only installed in December 2025 we are keen for it to remain in place so we can continue our investigations.

ASC's influence on turbidity is greatest in summer, when turbidity at Haslingfield reached 15 FTU, in contrast to the winter when the turbidity there can be as low as 5 FTU (in the absence of weather, high river flow or recent upstream dredging). There is also clear evidence of diurnal variation in summer, with turbidity increasing at all sites by about 4-6 FTU at night (when ASCs are most active) and declining during the day.

However, it should be noted that the Rhee is markedly more turbid that the Granta/Essex Cam, which joins the Rhee just downstream of Haslingfield. Although they are both infested with ASCs, we suspect that the key difference is that the Granta/Essex Cam flows over many more deposits of gravel, whereas the Rhee tends to flow over much more valley alluvium and gault clay. This means that the Rhee valley inherently has more fine sediment to mobilise.

We wonder if the turbid state of the Rhee is due to an unfortunate combination of factors:

1. Repeated dredging and slubbing-out of the Rhee, most recently from 29 January to about 7 February 2026 at Ashwell End. (See p16 for the timeline of occasions we're aware of.) The fine clay sediment then spreads downstream, settling out on the bed of the chalk stream. Although the bulk of the fine clay originates from dredging, we suspect there will be some additional sediment from other sources, including the following:
    - winter erosion of the clay riverbank, exacerbated by the deliberate removal of vegetation (some as a result of herbicide use by the Environment Agency)
    - summer bank erosion due to extensive crayfish burrowing particularly since 2018 (but note that we have no evidence they have yet reached Ashwell End)
    - field soils either directly or via field drainage ditches
2. Initially this sediment may only have had local impact, but by 2011 American Signal Crayfish were frequently observed downstream of Barrington, and since 2018 they have been spreading upstream of Barrington. We suspect that their aggressive burrowing and foraging on the bed of the stream is mobilising the fine clay sediment.
3. Since March 2019, there has also been increased riverbed erosion and channel incision between Barrington and Harston, due to the removal of Harston Mill Weir in March 2019.
4. Fine clay soils of the upper Rhee, near its source at Ashwell, and in tributaries such as the Mill River. We are also told that the gault clay has become exposed in the riverbed much nearer to Cambridge. One example is the stretch from Barrington to Harston where in 1992 the river was deeply dredged and its banks reshaped.

Although it is impossible to change the local geology, and nearly as difficult to eradicate American Signal Crayfish, this suggests three aspects to the solution.

- Encourage the upstream famers to stop their dredging activities, (eg through regulatory control by the Environment Agency or Council) increase riverbank integrity and increase field margins to filter soil-carrying surface water,
- Help stabilise the banks by ceasing herbicide use and reducing the shading (that has developed over the year) to allow vegetation to regrow and bind the soft banks, This would in turn reduce the amount of fine sediment down-washing into the river.
- Repair the damage caused by dredging. We understand that the best solution is to add gravel or aggregate, which then reduces further erosion of the stream bed.

We acknowledge that the large amounts of gravel needed may appear expensive but the solution would be cost-effective in the long term, and with major developments such as East West Rail in the area, huge amounts of local aggregate will be generated in the near future.

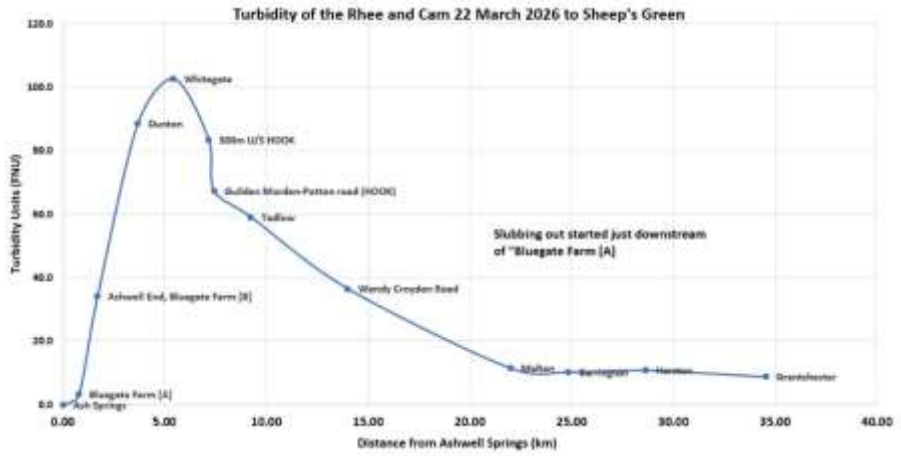
These measures might produce a significant improvement in turbidity.

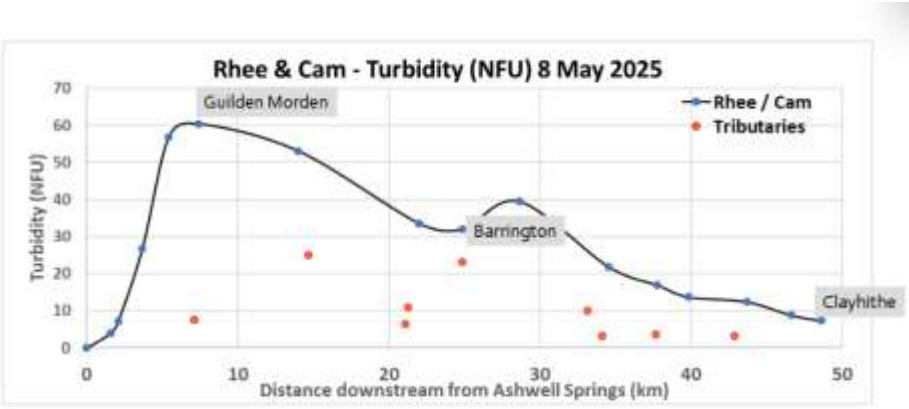
This could in turn help improve the "Poor" Bathing Water quality of the Cam at Sheep's Green This could be a relatively low cost, nature based, supplement to the installation of UV disinfection at Anglian Water's Haslingfield Sewage works.

This is because clearer water would allow the UV from sunlight to inactivate faecal bacteria and viruses from Haslingfield Sewage works, about 5km upstream of Sheep's Green. We suspect this is why, in contrast to the Cam at Sheep's Green, the Bathing Water quality in the crystal-clear River Stour at Friars meadow, Sudbury is excellent, despite it also having an upstream sewage works.

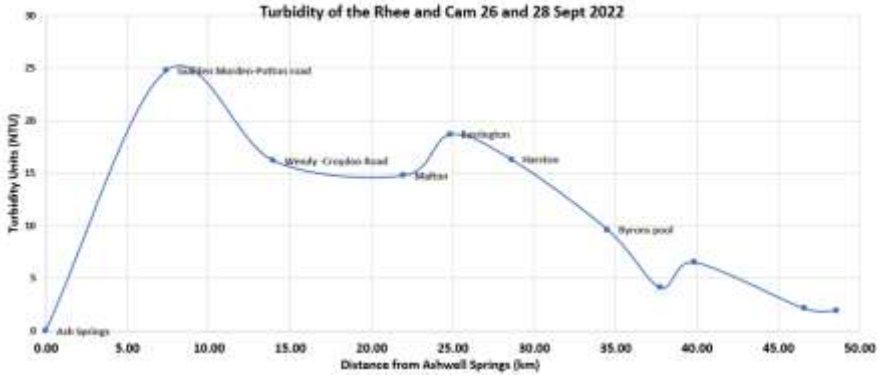
River Rhee turbidity surveys in 2022 - 2026

In September 2022, May 2025 and March 2026, Mike Foley of Cam Valley Forum surveyed the Rhee, from the chalk stream source at Ashwell, via the confluence with the Granta/Essex Cam to the Cam at Clayhithe. This work used a Hanna HI-98594 Multiprobe, kindly lent by Hobson's Conduit Trust. The results consistently showed that the source was crystal clear, but a few km downstream the turbidity dramatically increased to a peak at near Guilden Morden. Turbidity then improved downstream, except for a slight rise between Barrington and the Harston/Haslingfield, particularly in the warmer months.





Although not specified in this chart some tributaries are Chalk streams and two have become turbid as they approach the junction with the Rhee



In March 2026, the big peak in turbidity (at Whitegate Bridge, just upstream of the Guilden Morden bridge – "Hook") was nearly twice as bad as in May 2025, with turbidity reaching a shocking level of over 100 FTU. The turbidity peak here was less severe in September 2022. This is probably because 2022 had a prolonged period of summer drought with no rainfall for weeks, ditches were dry, and river flow rates were low. Yet, turbidity at Haslingfield remained high in 2022, presumably because of the presence of American Signal Crayfish.

We are confident that the peak in March 2026 in the upper Rhee is largely due to dredging that took place from Ashwell End to Dunton Lodge from 28 January to about 7 February 2026. As the photographs below, and as data from the Environment Agency data sonde at Wendy confirms this dredging was clearly a major source of turbidity. The effects are surprisingly persistent, lasting weeks or months and clearly visible far down the Rhee.

From Dunton Lodge Farm Bridge 22 March 2026

The damage to the bank is clearly visible at Ashwell End in early 2026, with extensive clay left in the bed, ready to be washed out in the next flood.

Even 4 months later, on 2 May 2026, the Rhee still appeared unpleasantly turbid at Wendy, about 8 km downstream of Ashwell End.

Photograph of Rhee at Wendy, taken from the bridge with the EA data sonde, 8am 2 May 2026, when the turbidity was around 23 FTU

Although in theory field drains could be contributing sediment, as the photograph below shows, in March 2026 the run off from the fields was substantially clearer than the turbid river Rhee.

River Rhee, near Guilden Morden, high turbidity 22 March 2026, with much clearer water entering from right, exiting extensive field drainage systems from Edworth and Cockayne Hatley

We suspect the peak in turbidity at Harston/Haslingfield is due to American Signal Crayfish. These infest the Barrington area, although initially we were not sure how much further upstream they'd reached, or whether they were present in sufficient numbers to be significant.

In support of this, we note that the subsidiary peak at Harston/Haslingfield bridge was most evident in September 2022 and May 2026, and least evident in March 2026. This is consistent with the idea that American Signal Crayfish may be contributing more to the turbidity when they are more active in the warmer months.

Environment Agency Data sondes

During 2025, the Environment agency installed data sondes measuring turbidity (amongst other parameters) at Wendy, Malton and the Harston/Haslingfield Road bridge. These are very useful for helping us identify potential causes of contamination, both from agricultural activity such as dredging and as a way of monitoring for the presence of American Signal Crayfish.

We really hope, on behalf of all Citizen Scientists in the Cam Catchment, they can remain in place throughout the 2026 bathing season, to allow us to correlate turbidity levels with water quality and E.coli levels at Sheep's Green.

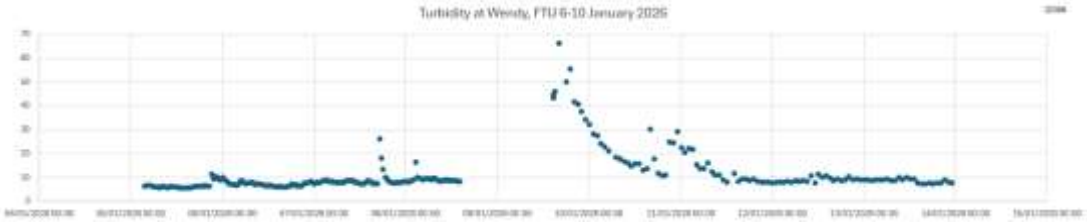
The data are available here

Dredging and high river flow rates

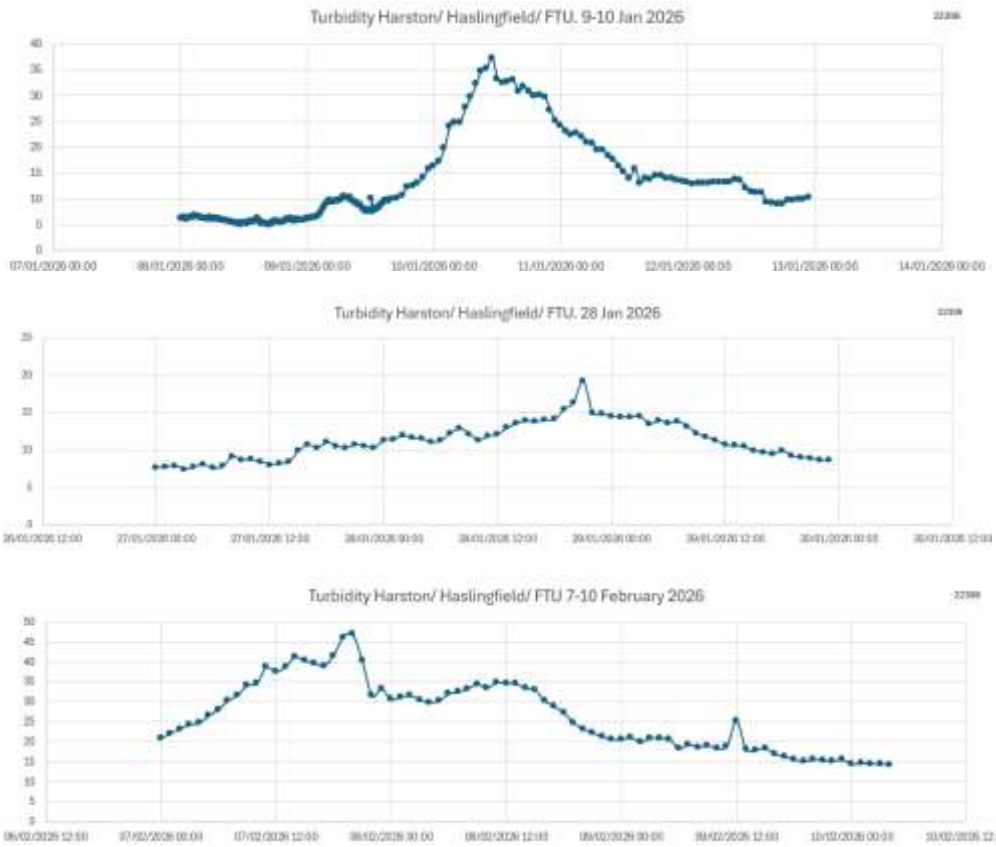
The data shows several very significant contamination events during the winter months 2025-6. For example, three events were clearly visible in the Sonde data at Wendy, Malton and Haslingfield on 9-10 January, 28 January and 6-7 February 2026. Each time it was worst at Wendy, with lower turbidity values at the downstream sites, as summarised in the table below

	9-10 January 2026	27-28 January 2026	6-7 February 2026
Wendy	>65	30	70
Malton	40	15	35
Haslingfield	33	20	37

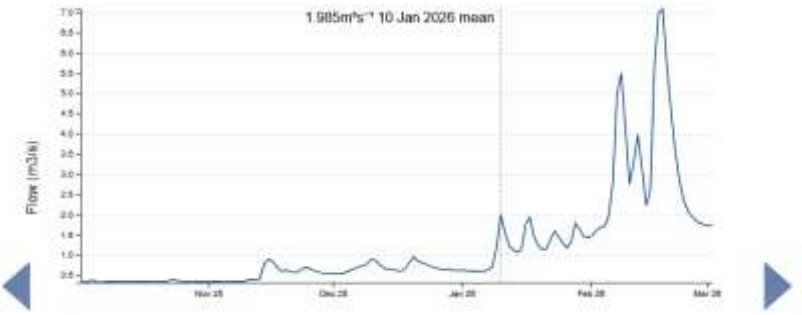
The Sonde data shows these events very clearly. For example at Wendy the data sonde stopped recording on 10 Jan when turbidity reached over 65 FTU, we suspect due to fouling of the sensor.



Downstream in Haslingfield the effects were more minor but the impact was still clearly evident, with the turbidity peaking at 47 FTU on 7 February 2026.



The first of the 3 events, on 10 January, may be due to rainfall and high river flow. It's noticeable that the flow rate of the Rhee at the Burnt Mill gauging station at Haslingfield increased significantly on 10 January 2026, following many months of low flow. This may well have washed accumulated upstream soil and sediment down the river and caused the first of the three increases in turbidity



However, the high turbidity peaks on 28 January and 7 February are due to upstream dredging or slubbing out. The farmer at Ashwell End which is around 20-25km upstream of Haslingfield, has informed us that they slubbed out from about 29 Jan to about 7 February 2026, which coincides with the latter two increases in turbidity.

Before these contamination events the turbidity at Wendy was around 6 FTU, increasing to around 30 FTU after 7 February 2026. At Haslingfield, it increased from around 5FTU to 15 FTU. This suggests a steady buildup of soil and fine clay suspension in the river.

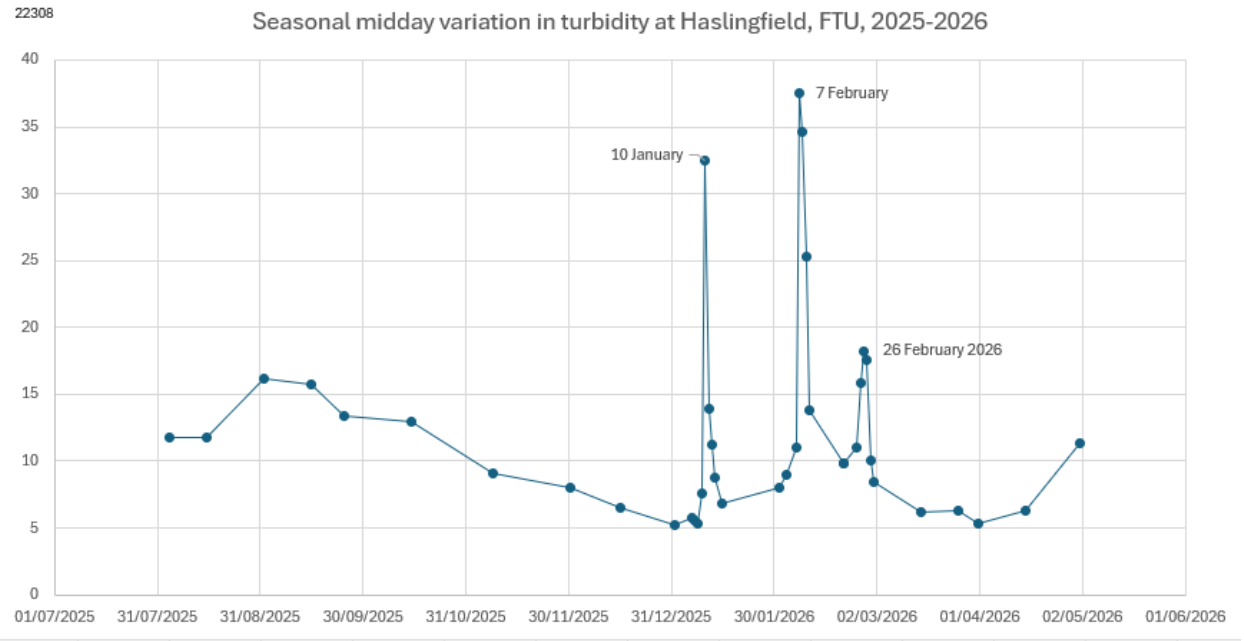
American Signal Crayfish: Seasonal and diurnal variation

American Signal Crayfish are more active at night than during the day, and are far less active in the winter months. This means that, if they were a significant contributor to the turbidity, one would expect to see a diurnal variation in turbidity in summer, but less so in winter.

This is indeed what happens, according to data from the Environment Agency data sondes.

Haslingfield

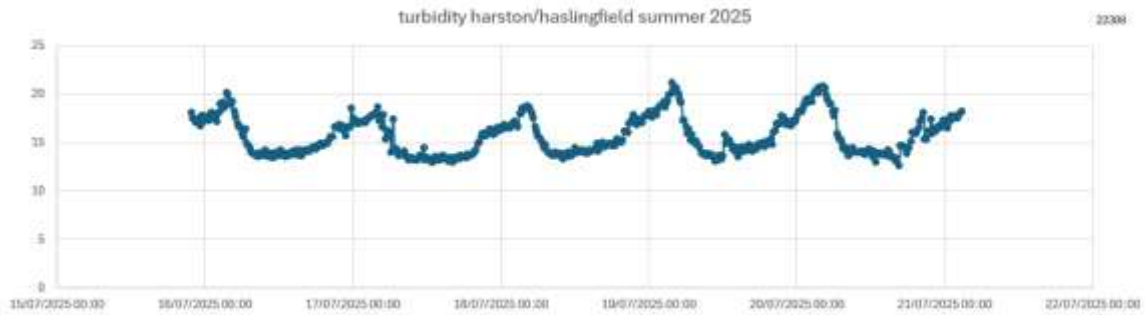
We started by plotting the results for Haslingfield, to look for a seasonal trend. If worse in the summer, it could imply the presence of American Signal Crayfish which would contribute more to the turbidity when more active in the summer. If worse in the winter, it might imply that the turbidity was due to agricultural activities, with, for example, soil washed off bare fields in winter storms, and more suspension of silt.

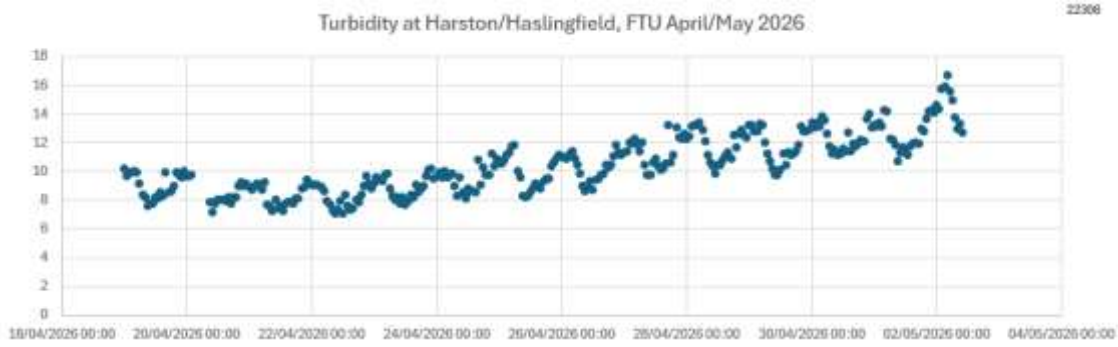


Discounting the obvious winter turbidity events discussed in the section above, the data confirmed that there IS a clear seasonal trend at Haslingfield. Turbidity is worse in summer, typically reaching around 15 FTU. The turbidity (excluding contamination events) then reduced and reached 5 FTU in winter. This seasonal pattern would be consistent with the activities of a high population of American Signal Crayfish.

The sonde data show that in July 2025 at the Harston/Haslingfield road bridge the turbidity typically varied between around 14 during the day, and a peak of around 20 at night. In spring 2026, there was once again clear diurnal variation, increasing markedly from around 8 on 20 April 2026, to around to 21 on 5 May, probably as the American Signal Crayfish started to become active after the winter. Notably during this time period there was no or very little rainfall in the area to increase soil runoff into the river or change the flow dynamics (Rhee flow at Burnt Mill gauging station was consistently falling).

This diurnal variation is shown in the figures below.



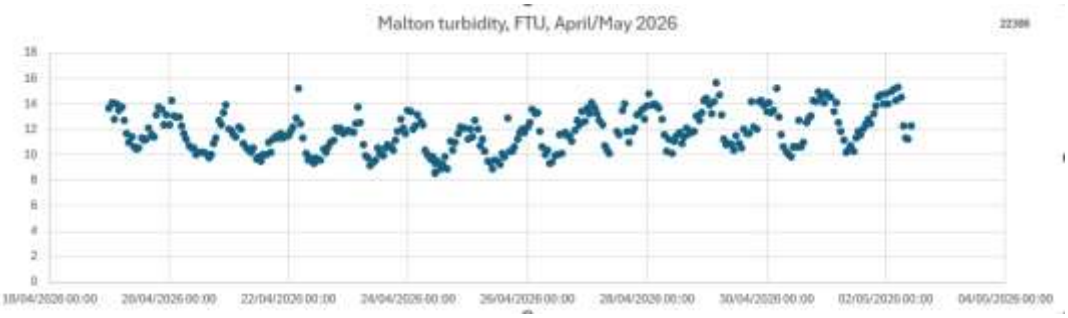


In contrast, in February 2026, there was no diurnal variation, although the turbidity peaked at around 47 FTU on 7 February 2026, probably due to slubbing out upstream.

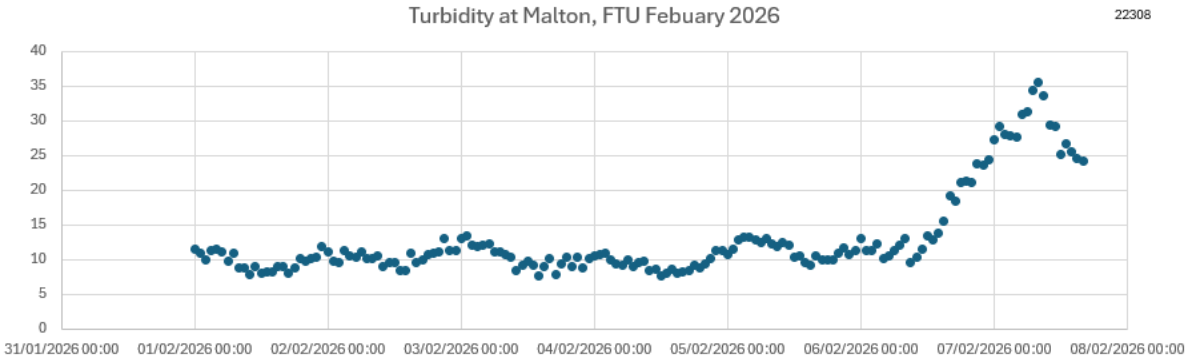
This suggests that American Signal Crayfish are indeed present, and contributing around 5 FTU / day to the turbidity at Haslingfield during the warmer months, with their foraging and burrowing.

Malton

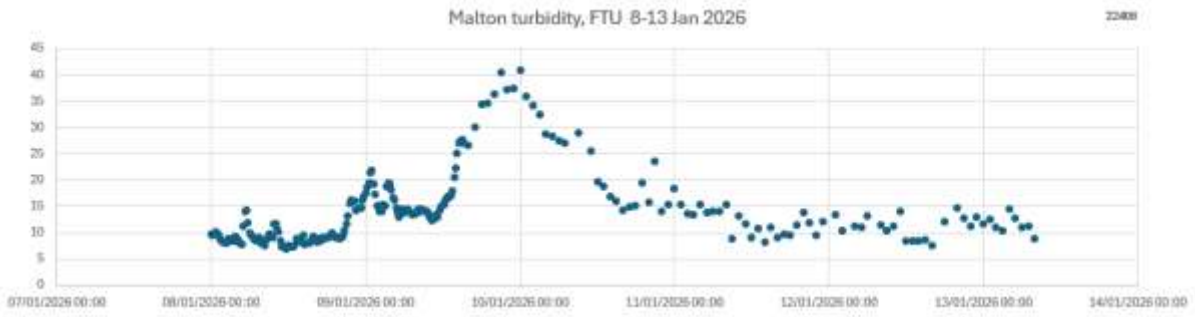
We can see from the Environment Agency sonde data that American Signal Crayfish are also present and active upstream of Haslingfield at Malton and we think this is contributing to the turbidity there. There was clear evidence of diurnal variation in April/May 2026, with the turbidity increasing from around 9 during the day, to a peak of around 14 at night.



In early February 2026, there was a slight diurnal variation at Malton, perhaps indicating low levels of activity of the American Signal Crayfish. However, the slight diurnal variation was dwarfed by a dramatic increase in turbidity from around 10 to around 35 FTU on 6-7 February. We assume this is when the Rhee was slubbed out from Ashwell End to Dunton Lodge.



In January, as expected, there was no evidence of active American Signal Crayfish at Malton.

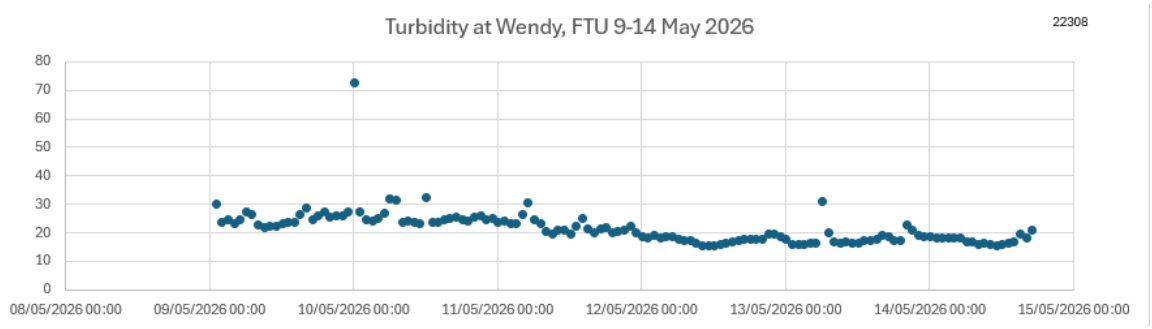


Wendy

Further upstream still, at Wendy, there was again clear diurnal variation, noticeable in late February and March, but absent in January and early February 2026. Unexpectedly, the diurnal variation was also hard to decern in early May 2026.

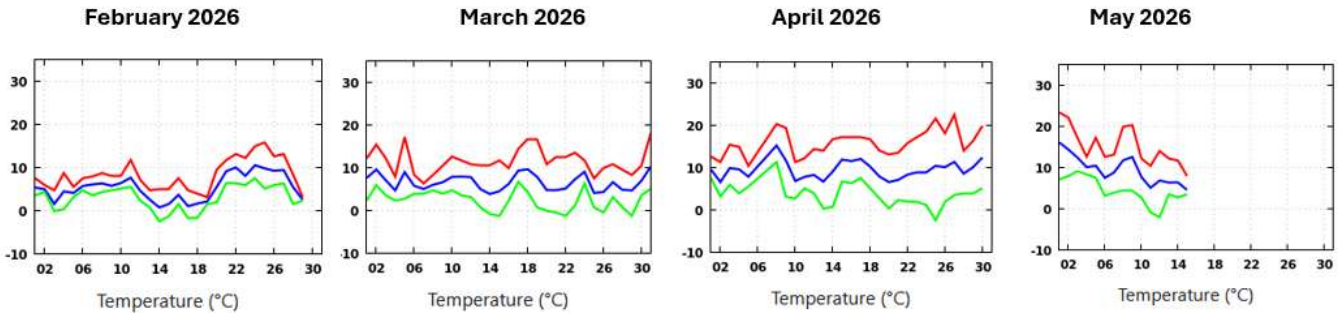
Traditionally, the active period of American Signal Crayfish extends from early May to November, so evidence of activity in late February may be a sign that activity is starting earlier than we'd expected.

The diurnal variation was also clearly visible in the data for early March, but we were surprised that it was absent in early May 2026, when we'd expect crayfish to be more active.



We wonder if this is because late February was unusually warm, while early May 2026 was unusually cool. In each case, the minimum nighttime water temperatures were just 8-9C. Could the American Signal Crayfish have become less active for some reason? Or is some other source of turbidity masking their signal? It's not yet clear to us what's going on.

As the sonde at Wendy was only installed in December 2025, so we are keen for the three sondes to remain in place over the summer 2026 so we can continue our investigations during the 2026 Bathing season.



Temperature data from Cambridge University computer lab roof (which may well be warmer than at Wendy)

Local historical observations

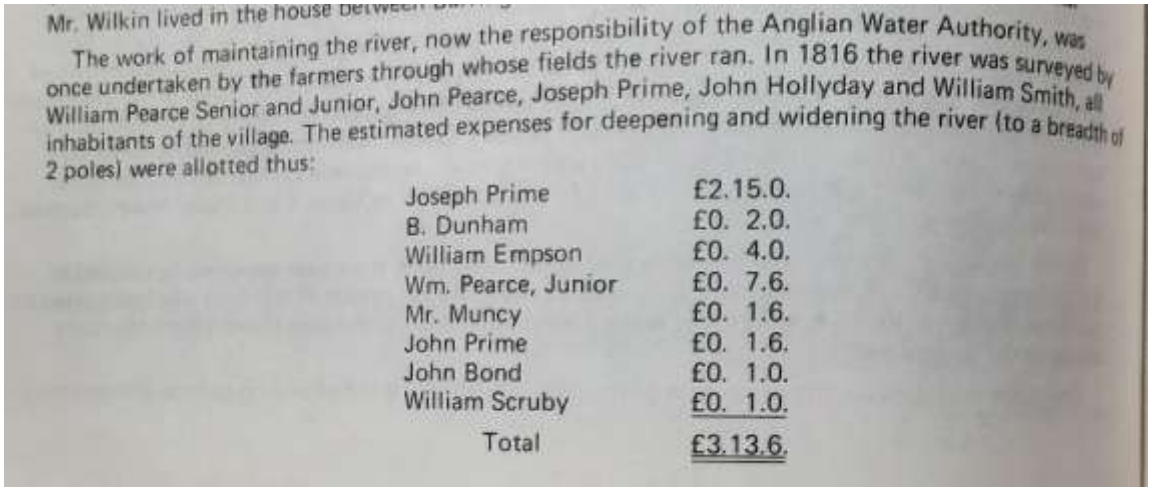
The Rhee has been subject to several interventions within living memory, that will have contributed to the increase in turbidity. The table below summarises the ones we are aware of.

They are illustrated with a few photos below.

Timeline of interventions and observations

Date	Event	Sources of information
1816	First recorded deepening and widening of the Rhee at Barrington	Barrington Local History and Conservation Society
1972	Rhee dredged at Barrington near Foxton Bridge	Barrington Local History and Conservation Society
Spring 1974	First known dredging of the Rhee at Ashwell End	Bluegates Farm.
1992	Rhee deeply dredged from Barrington to Harston Mill, and banks reshaped	Rob Mungovan, Wild Trout Trust
~1995	Rhee starts to becomes more turbid at Tadlow	Environment agency historical data
1996	First recorded observation of American Signal Crayfish at Barrington	John Findlay, Environment Agency
2001	Rhee still crystal clear at Barrington bridge	Rob Mungovan, Wild Trout Trust
Around 2005	Rhee starts to become more turbid at Barrington	Rob Mungovan, Wild Trout Trust
2011	Observations of American Signal Crayfish become more common on the Rhee, downstream of Barrington	John Findlay, Environment Agency
2010- around 2018	Environment Agency using herbicide to remove vegetation from the banks of the Rhee	Rob Mungovan, Wild Trout Trust
January 2017	Dredging of the Rhee at Ashwell End	Bluegates Farm
2018	Only limited numbers of American Signal Crayfish upstream of Bulbeck Mill, Barrington	John Findlay, Environment Agency
March 2019	Completion of the removal of the weir at Harston Mill by the Environment Agency	Rob Mungovan, Wild Trout Trust
2022	American Signal Crayfish starting to be observed in larger numbers upstream of Bulbeck Mill, Barrington	John Findlay, Environment Agency
Summer 2025	American Signal Crayfish observed on Mill River near Wendy	Mike Foley, Cam Valley Forum
~ 29 Jan- 7 Feb 2026	Dredging of the Rhee at Ashwell End	Bluegates Farm

First recording deepening and widening of the Rhee at Barrington, 1816



Mr. Wilkin lived in the house between

The work of maintaining the river, now the responsibility of the Anglian Water Authority, was once undertaken by the farmers through whose fields the river ran. In 1816 the river was surveyed by William Pearce Senior and Junior, John Pearce, Joseph Prime, John Hollyday and William Smith, all inhabitants of the village. The estimated expenses for deepening and widening the river (to a breadth of 2 poles) were allotted thus:

Joseph Prime	£2.15.0.
B. Dunham	£0. 2.0.
William Empson	£0. 4.0.
Wm. Pearce, Junior	£0. 7.6.
Mr. Muncy	£0. 1.6.
John Prime	£0. 1.6.
John Bond	£0. 1.0.
William Scruby	£0. 1.0.
Total	£3.13.6.

Extract from *Barrington Local History and Conservation Soc's book "Cam or Rhee" 1973*

7.1 Dredger at Barrington, August 1972

Photo by Roland Parker, from Barrington/Foxton bridge, published in Barrington Local History and Conservation Soc's book "Cam or Rhee" 1973

The Rhee between Barrington and Haslingfield was still crystal clear in 1996 and 2001

Rob Mungovan says "*Note how clear the water is with water crowfoot and extensive margins of reedsweet grass. By late summer there was always dense stands of arrowhead and unbranched bur reed*"

Chris Mungovan fishing near Harston/ Haslingfield bridge in the shallow clear water of Rhee with water crowfoot around him ~1996. Photo © Rob Mungovan

Rob Mungovan "This shows me at the bridge at Barrington having just lost a trout which I had sight-fished for in the clear water, that pic is dated Aug 2001.

In the early 2000's the river started to become turbid, I remember raising it as an issue at the Cambs Biodiversity Partnership meeting probably a few years later"

American Signal Crayfish

American Signal Crayfish were introduced to the UK in the 1970s, and they spread rapidly.

We suspect they were only present in limited numbers on the Rhee at Haslingfield before 2008, and potentially only reached upstream of Bulbeck Mill in Barrington in 2018.

John Findlay of the Environment Agency has supplied data showing that although there was an observation of an American Signal Crayfish near Barrington in 1996, they were rare. Observations were more frequent on the Rhee after about 2011. Sightings also became increasingly common on the Granta after that time, with many sightings around Linton.

He suggested that on the Rhee, Bulbeck Mill in Barrington impeded the spread of American Signal Crayfish upstream of Barrington.

In 2018, during a careful survey for Mill River reserve, (which is near Wendy) there were only limited numbers of American Signal Crayfish upstream of Bulbeck Mill in Barrington. To help protect a small remaining population of native Crayfish, John Findlay had advised NOT undertaking modifications at Bulbeck Mill to ease fish passage, in order to delay the spread.

However, there were observations of American Signal Crayfish in Wendy in 2022, and adult American Signal Crayfish were confirmed in Mill River near Wendy in summer 2025 by Mike Foley and Ruth Hawksley of the Wildlife Trust.

As discussed above, the EA data sondes appear to show some evidence of active American Signal Crayfish at Wendy in the unusually warm February 2026 and March, but not in the unusually cool early May. We are keen for the sondes to remain in place so we can continue to investigate this over the summer bathing season.

From local observations American Signal Crayfish are now widespread on the Granta/Essex Cam as well as the Rhee.

However, although American Signal Crayfish are present in both these rivers, the Granta is much less turbid that the Rhee, as can be seen at the confluence downstream of Haslingfield in a photo taken in 2015.

Confluence of Granta and Rhee, 2015, showing the murky flow from the Rhee in the foreground and the flow from the Granta Essex/Cam in the rear.

This has puzzled us: Why is the Rhee so much worse than the Granta/Essex Cam? It can't just be due to the presence of the Americal Signal Crayfish.

We believe the answer is that the Rhee has suffered from repeated dredging which has released large quantities of fine clay soils into the river which are now being mobilised by the American Signal Crayfish. The situation is aggravated by the exposed the bed of the river, which is now suffering increased erosion after the removal of the weir at Harston Mill in March 2019.

Although the Cam and Granta have also been dredged, the two catchments have different geology. The Cam and Granta have better capacity to restore naturally, due to the availability of gravel that gets remobilised and protects the bed. In the Rhee valley there is very little supply of gravel and other hard sediments. It seems that what gravel there once was, has now been removed by repeated dredging and other interventions such as the removal of the weir at Harston Mill.

This means that the Rhee now much more vulnerable to dredging and the activities of American Signal Crayfish

2019 letter to Haslingfield Parish Council

In 2019, Rob Mungovan, now Conservation Officer East Anglia and Central, at the Wild Trout Trust, wrote to Haslingfield Parish Council, an answer to their concerns about the increased turbidity. He wrote

"*Around 1992 the Rhee [Between Barrington and Harston Mill] was subject to old fashioned dredging which, in my view, removed some of the last coarse material from its bed (certainly Barrington through to Harston, probably further but I was young and could not explore further). That dredging exposed the gault clay layer in places, it is my view that since then fine clay particles have been constantly mobilised by the river's flow. The increase in river turbidity may have affected the ability of some aquatic plants to grow. However, since that time the signal crayfish population has exploded and now the animals are scuttling around on the riverbed constantly mobilising the sediment, this is called bio-turbidity. Signal crayfish will also eat any remaining plants and burrow into the banks throwing more sediment in the water. I don't believe that the signal crayfish problem is too bad at Meldreth/Malton yet, hence why the river can be clearer up there. I agree that the Rhee was once a clear flowing chalk river with a firm gravel bed in places.*

In combination with the increasing crayfish population the EA have turned to the use of herbicide to control river plants in the last 10 years. They have used it on a number of occasions on the Rhee (although are not keen to own up). The application of herbicide has killed off marginal vegetation that previously held the bank together, that has left them even more vulnerable to crayfish erosion and collapse. We are now seeing even more fine sediment entering the river.

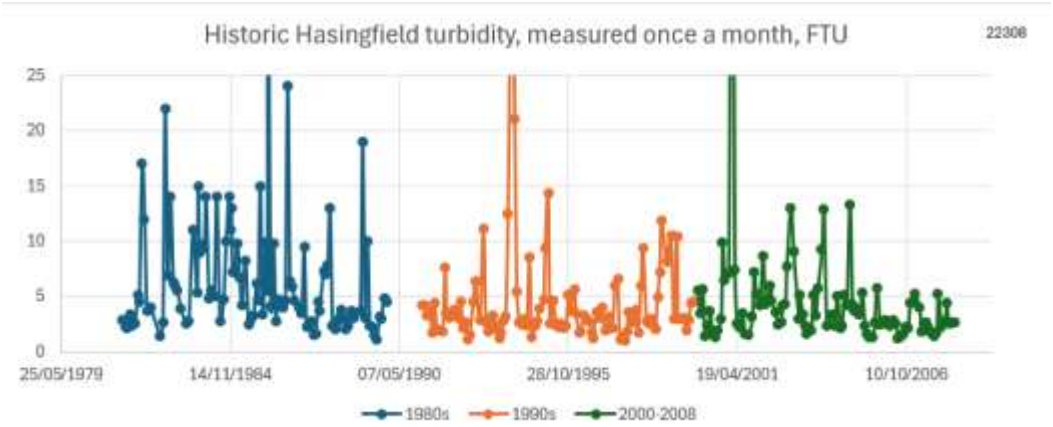
The removal of the weir at Harston was a good idea but should have been part of a wider restoration project for that entire reach of river. By removing the weir, the river has spent this spring and summer flushing out tonnes of silt from the Barrington reach to Harston. That material can only move downstream and that is why the Rhee has been even more turbid this year. The Rhee valley contains no significant deposits of coarse material, hence I very much doubt if the river will achieve any meaningful restoration without physical intervention to re-create the former gravel beds and high bed level. With the bed having been lower by dredging, and with the weir removed which previously held back water levels, the river can only down cut as it tries to achieve a balance between gradient, sediment transport and flow. I predict that the Rhee will continue to transport high volumes of fine sediment downstream, and that once it becomes shallow it will become infested by branched burr reed which will dominate it until a shallow bed profile is restored"

Reduced river levels on the Rhee in April 2019, showing Hoffers Brook entering the Rhee after completion of the removal of the weir at Harston Mill in March 2019 © Rob Mungovan.

Historic data from the Environment Agency

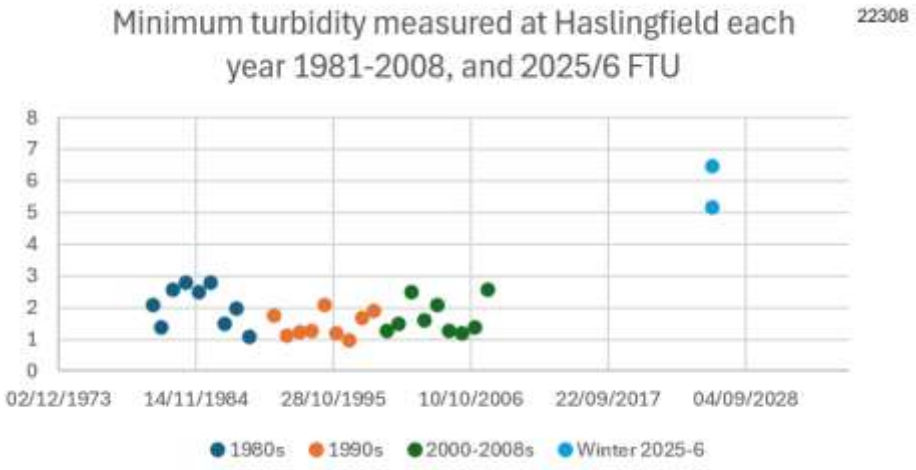
Longtime residents tell us that until around 20 years ago, the River Rhee at Haslingfield was much clearer than today.

To help us investigate this, the Environment Agency has supplied us with a copy of their historic turbidity data. This was measured once a month at the Harston/Haslingfield road bridge from the 1980s to 2008 (and at several other sites further upstream).



This shows that, although in some months, turbidity was higher than in other months (which will sometimes be because of higher rainfall washing soil and silt into the rivers) there was little difference in the pattern of turbidity between the 1980s, 1990s and 2000's.

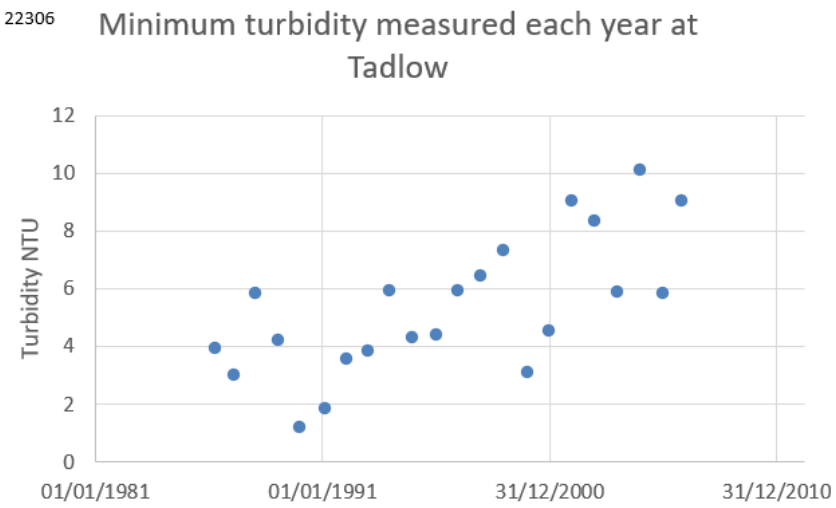
To get an indication of the clarity of the Rhee, under its best conditions, we have plotted the minimum turbidity values during each year.



This shows clearly that the turbidity has indeed deteriorated at Haslingfield in the last 20 years. In the 1980s 90s and early 2000s it would frequently reach a minimum of 2 FTU which would have appeared crystal clear, in contrast to a minimum of 5 FTU in early 2026.

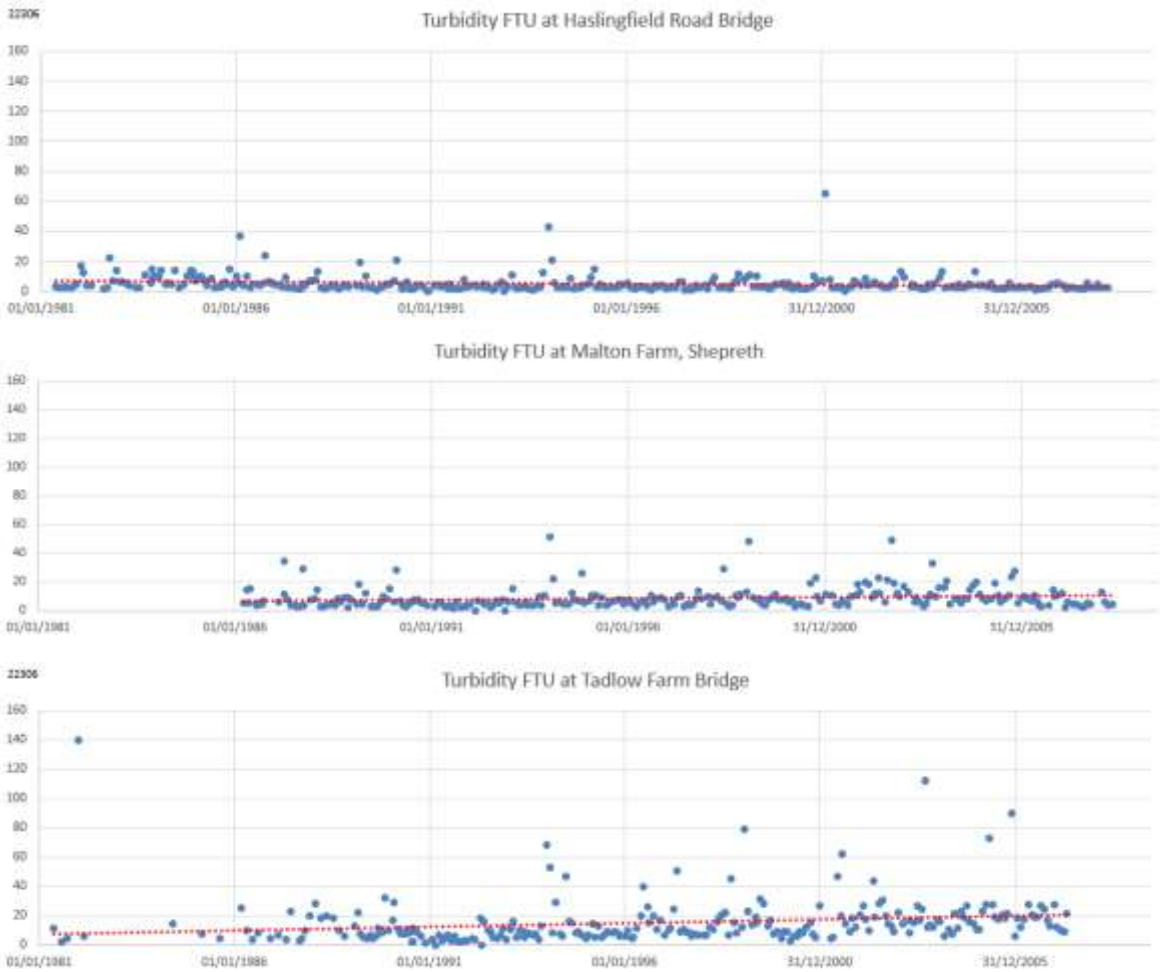
To try to identify the cause, we looked at the Environment Agency's historical data for several sites upstream of Haslingfield.

At Tadlow, there is clear evidence of deterioration, which seems to start in around 1995. This is consistent with local reports that the river between Barrington and Haslingfield started to become more turbid in the early 2000s, and that it was worse upstream of Barrington



The graphs below compare Tadlow, Malton and Haslingfield in the 1980s, 90s and 2000s, up to 2008. These show a clear pattern of Tadlow being worse than Malton, which is in turn worse than Haslingfield.

During this time the turbidity at Tadlow and Malton has been deteriorating, while the turbidity at Haslingfield may have slightly improved.



Conclusions

Our monitoring shows that in the period 2022-2026, the turbidity of the Rhee has been far worse in the general area of Whitegates/Tadlow/ Guilden Morden than upstream or downstream, with peak turbidity measured at over 100 in March 2026. Environment Agency historic records shows that the turbidity has been worse at Tadlow than Haslingfield since at least the 1980s, and that it started to deteriorate further at Tadlow in around 1995. Local reports suggest that it deteriorated in Haslingfield after around 2005.

We wonder if the unusually turbid state of the Rhee is due to an unfortunate combination of circumstances:

- The fine clay soils of the upper Rhee, near its source as a chalk stream at Ashwell.
- Repeated dredging the upper reaches of the Rhee in winter. This was first recorded in 1816 and has happened at intervals since 1972, most recently between 28 January and 7 February 2026. The fine clay sediment then spreads downstream, settling out on the bed of the chalk stream, ready to be mobilised by high river flows, and other disturbances. In places this dredging has exposed the gault clay (for example between Barrington and Harston), thus accelerating the erosion and silt production.
- Herbicide use by the Environment Agency during the 2010s has contributed to exposed banks and probably to increased erosion.
- American Signal Crayfish became more common downstream of Barrington in 2011, and since 2018 they have been spreading upstream of Barrington. Although they are also present on the Granta/ Essex Cam, we believe that the key difference in the Rhee is that their aggressive foraging on the bed of the stream is mobilising the fine clay sediment that is a feature of the upper Rhee. Their extensive burrows add to the silt, and as the banks have little vegetation to hold them firm, bank collapses supply further large amounts of sediment.
- The removal of the weir at Harston Mill in March 2019 is also aggravating the situation, as the river Rhee down-cuts through the bed, trying to achieve a balance between gradient, sediment transport and flow.

Although it is impossible to change the local geology, and nearly as difficult to eradicate American Signal Crayfish, this suggests that if the upstream farmers could be encouraged to stop their dredging activities, the Environment Agency stopped herbicide use on the Rhee, and appropriate remediation work was implemented, this could produce a significant improvement.

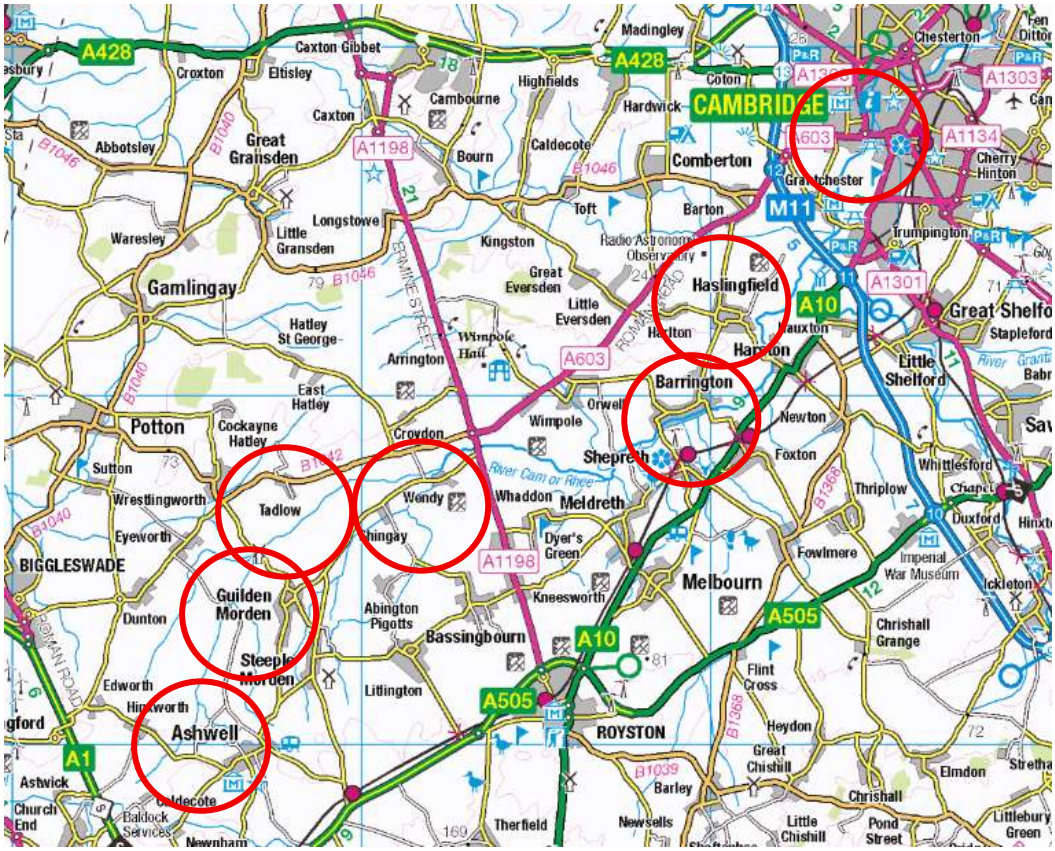
We also want to point out that East West Rail maybe provides an opportunity to remediate the bed of the Rhee at lower cost than would otherwise be expected.

East West Rail will shortly be undertaking major construction works in the immediate vicinity of the Rhee including tunnelling through Chapel Hill at Haslingfield, which will generate huge amounts of aggregate. We wonder, could this aggregate be used to restore the bed of the Rhee, and thus reduce the turbidity? We would like to see this investigated.

This in turn should help improve the health of the river and reduce the E.coli levels in the Designated Bathing Water at Sheep's Green. This in turn should reduce the health risks to swimmers and other recreational water users at Sheep's Green.

Maps

Places mentioned in the text are indicated with a red ring




Guilden Morden
Dunton Lodge Fm
Ashwell


Bluegates Farm
Ashwell End
Common Lane
Ridge Way (Track)
River Rhee
Bluegates Dairy
Elbrook House
Ashwell Bury
Ashwell Grange
Sales Acre
Love's Farm
Quarry Hills Farm
Cuckoo
Holme Park Stud
Hinxworth Road
Farrow's Farm
Ashwell
Cemy
War Meml
Baldwin Corner
Arbtree Farm
Sewage Farm
Moat
PO
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