CAM VALLEY MATTERS No. 91 11 January 2024
The Occasional Newsletter of the Cam Valley Forum
www.camvalleyforum.uk
Secretary/Treasurer: Bruce Huett Editor: David Brooks
Please email davidbrooks@btinternet.com with any items for him to consider for the next newsletter or to request that your address be taken off (or added to) the emailing list. Do forward this newsletter to anyone who may be interested.

Can you recall those halcyon days on **Grantchester Meadow c.1960**? Was there honey still for tea? Was the Cam as turbid then as it is now? Were the Haslingfield sewage works (scroll to Newsletter 73) spewing out stuff then? Were Scientific Citizens measuring it (see N. 81)?

The current **CVF Citizen Science** programme has been focusing on water quality in **Vicar's Brook**, the Cam's right bank tributary just downstream. See the photograph (N.82) of its clear water on the left entering the turbid Cam at Hodson's Folly. Samples are taken to CVF's ultra-modern laboratory in a corner (photo below) of a member's home, for analysis of phosphate and *E. coli*.

Phosphate concentration is a key indicator of **Chalk stream health**; high levels cause gravel on the bed to become coated with ugly filamentous algae. Sources include detergents (such as car shampoo), fertilizer use, and sewage. A Chalk stream should contain no phosphate. ***E. Coli*** on the other hand is an indicator of only one thing — animal or human ordure. The *E. Coli* count relating to a sample from Vicar's Brook on 23 November 2023 turned out to be a shocker. The outfall from the Brooklands Avenue surface water sewer was producing a very milky-looking effluent.

The source was traced to a misconnected portable toilet at a construction site. On another occasion in recent years the serious discoloration of the Brook was found to be caused by builder's waste poured down a manhole in Barrow Close. Pollution from building development in the vicinity of Cambridge Station has also found its way into the stream. And remember, for as long as High Streets and highways have been drained, the water is conveniently fed into local streams, along with oil, tyre-wear, and all the other nasties.

Yet Newsletter 67 described an electro-fishing survey of Vicar's Brook in 2021 which revealed the presence of at least 10 species of fish. On the other hand, however, the invertebrate count was low. In that year brushwood faggots and 48 tons of gravel were installed as part of a channel restoration project.

If you would like to join our monitoring team, let us know. Sampling is fun:

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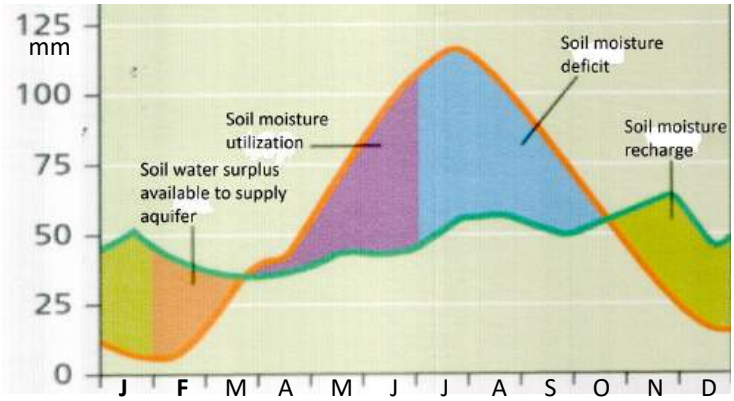
Since the role of CVF Chair has been trimmed to that of 'Rotating' or 'Collegiate' Chair the Committee seems to be spinning itself into what looks like a frenzy of worthwhile activity. Just as an example, now that her CVF application for Sheep's Green's **Bathing Water Designation** has been shortlisted by Defra, giving rise to optimism and much attention by the local press and the BBC, kayaker Anne Miller has been propelling herself along the Cam under the M11 to observe suspicious-looking drain pipes (photo).

Sealant hangs loose. Protest can be fine, but we believe it is action that counts. It is a truth generally acknowledged that, historically, the easiest way to dispose of **water and pollution from roads** is to direct it into the nearest stream. We are investigating on a broad front. Remember that contaminants from roads extend far beyond tyres, brakes, and oil, and they are washed into almost every local stream. What, for goodness sake, passes through these three pipes (left) into Giant's Grave, the source of the Cherry Hinton Brook?

If you secretly believe that the **wettest February ever** has solved the Chalk aquifer problem then take a look at the graph above, and do support our motion (at the CVF AGM on 18 March) calling for a **summer hose-pipe ban** (in anticipation of our next meeting with **Cambridge Water** (Newsletter 86) in April). During the period of 'soil moisture deficit' little or no rainwater reaches the water table so ground water is inexorably depleted due to spring flow and abstraction.

By the way, see here for a medium-term view of our water sources which still ignores the short-term crisis.



A schematic year's average 'water balance' graph for a location typical of the Cambridge region. *The vertical scale in mm is for both the green rainfall line and the brown line which shows the pattern of potential evapotranspiration. This is the theoretical maximum amount of evaporation from soil plus transpiration from plants.*

Our 'Citizen Science' programme (Newsletter 91) requires us to keep up to date with the tools available to work effectively. Maintaining good working relationships with Water Companies, the Environment Agency and Local Authorities is all part of this process. A recent visit by Richard Sewell and Richard Calverley to the Anglian Water Central Laboratory in Huntingdon proved to be very productive. Discussion topics were wide and varied, ranging from digital mapping to bacteriological testing of water. We are already starting to benefit from this visit.

The photo below shows some of the good hands the Cam waterways are in. There were three **guests at a recent CVF committee meeting**. Rupert Pearce Gould (Chair of the CamEO Partnership Steering Group, on left), informed us of the intention to develop an overall catchment plan scaled up, for example, from the Granta Project and similar. Nick Mann (centre, Friend of the Shep) strongly advocated rain-water harvesting. Robert Martyr (City Council Greater Cambridge Chalk Stream Project lead, second from right), has been engaged in prodigious research on all aspects of the complex Cam river system, fuelling our growing expectation that, in due course, our enthusiasms will be further inflamed. CVF committee member Bruce Huett is on the right and Richard Sewell second from left.


C Todd

CAM VALLEY MATTERS No. 93 28 March 2024
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Over 60 expectant members and guests attended our **Annual Lecture "Can the Cam Flourish Again?"** given on 18 March by Professor Simon Spooner (centre, photo above). The answer seemed to be "Yes", given enormous political and entrepreneurial will and capital investment, the intensive use of expensive technology, and the willingness of the Cambridge Water Company's customers to recognise and act on the current water-supply crisis. Simon's goading provoked some vigorous discussion (photo above).

Just before, during **the AGM**, the indefatigable Michael Goodhart (photo above) presented the CVF motion calling for **Cambridge Water** to impose a **hosepipe ban** (a TUB or temporary use ban) this summer. Support was overwhelming with one member even wanting two neighbouring water companies to be included. Though the Cambridge Company is resistant, this issue forms a key part of a lengthy agenda for our meeting with Cambridge Water in April. See, by the way, Michael's 10 top tips for saving water.

Awareness of the **water-shortage crisis** is spreading, but many people remain oblivious. The severity of the impending calamity can even be gauged by Cambridge Water's own Revised Draft Water Resources Management Plan (WRMP) 2024. The local voluntary organisation Transition Cambridge has taken up the matter of water depletion in the Chalk aquifer. Readers may be interested in their survey of water-saving actions.

Cambridge's urban development exemplar, **Eddington**, has a rainwater harvesting system installed in 3,000 homes. Every house is plumbed to receive the usual potable water and, separately, non-potable water from its scenic lake where rainwater is gathered and stored. The latter is for flushing, washing machines, and gardening. Yet the Drinking Water Inspectorate (DWI) forbids the system to operate because of instances elsewhere of the risk of cross-contamination for reasons including the activities of amateur plumbers. Cambridge Water is 'working' to 'progress' a change in legislation.

This photo was included in the 2024 CVF Essex Cam Report on how concentrations of the nutrients orthophosphate and nitrate vary over the catchment. Richard Pavitt of **CURAT** (Cam Upper Reaches Action Team) is seen sampling at Great Chesterford in 2022 when the stream bed was in a very poor state covered with algal mats. This major report is the outcome of CVF Mike Foley's continuing tireless voluntary dedication, like that of a dog to a bone.

Another tireless, dedicated CVF member is **Clara Todd** with her voracious appetite for all Cam matters aquatic. Since joining the committee recently she gleefully and modestly described her experience as like "drinking from a firehose" due to the group's vast knowledge and capabilities. Motherhood, Covid era mutual aid, climate anxiety, and an eclectic reading list led her to a Master's degree in Regenerative Economics at Schumacher College in Devon. Her thesis on the Rights of Nature applied to regional water systems acquainted her with our unique waterways and the many brilliant human beings advocating for them. She co-founded Water Sensitive Cambridge CIC to explore novel ways to mend the local water cycle and is also involved with Resilience Web and other local projects reaching for a more socially and environmentally just local economy. Clara is CVF networking supremo.

CAM VALLEY MATTERS No. 94 6 April 2024
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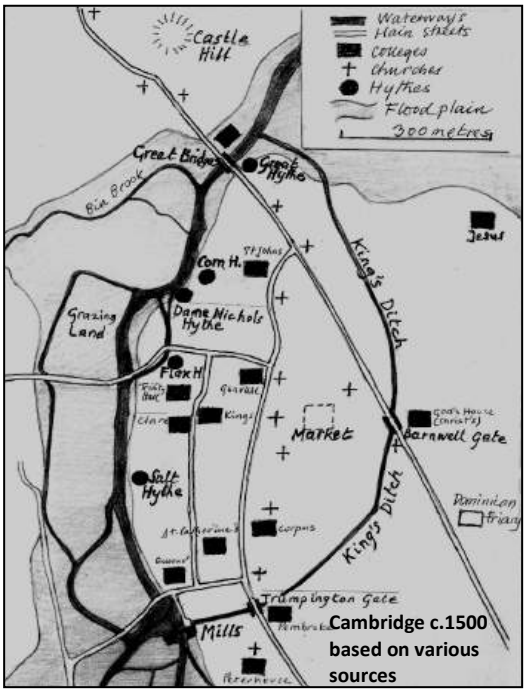
Former CVF Chair, Jean Perraton, reminds us that CVF's efforts are part of a long struggle against pollution:-

In 1500 the water quality of the Cam must have been generally good, but not where it flowed past the dirty little port town of Cambridge. The river and the King's Ditch (see map) served as sewers and rubbish dumps. The river carried away waste but it accumulated in the stagnant ditch, and obnoxious smells were blamed for outbreaks of plagues. Regulations were widely flouted; in 1502 alone 266 people were charged with fouling streets or dumping dung and dead animals into the river or the ditch. Talks between the town and university in 1574 agreed to prohibit throwing corpses into the river. By 1608 Hobson's Conduit was bringing water from Nine Wells along Trumpington Street to flush out the ditch. It made little impact but, soon after, extensions to the market square and beyond provided clean drinking water for the town. The ditch was gradually paved and built over.



Cambridge c.1500 based on various sources

The population of Cambridge increased almost fourfold in the 19th century and wealthier residents began to install water closets, replacing the simple earth closets from which the night soil went to fertilise nearby fields. In the 1870s St John's College even installed several mechanical earth closets with a door to the river (photo, above) from which the soil could be loaded on to boats and transported to fields downstream. Yet, more human sewage was flowing in the river, as well as the dung from the horses that carried people and goods about the town. Eventually the famous Joseph Bazalgette was asked to advise. He recommended pumping the effluent from the sewers to Milton where it would be used to fertilize fields. The pumping station (photo,left) opened in 1894 when, in the early years, refuse from the town provided fuel to drive the pumps while the grass that grew lushly on the fertilized fields fed the horses that pulled the refuse carts.


The Bridge of Sighs


Pumping station at Riverside

Conditions improved for people who hired canoes and rowing boats on the Backs, but downstream undergraduate rowers still complained of weeds and smells where the effluent from the sewage works seeped into the river. In the 20th century motor cars relieved the river of some dung and urine, but the population continued to grow, and waste from industry increased. In the 1940s newspapers reported several mass 'fish kills', mainly above Baits Bite lock but at least one above Jesus Lock, as well as extensive oil spills at Riverside, where the gas works was a major polluter. There were also oil spills along the Backs, while at Sheeps Green the river sometimes stank and ran yellow with effluent from the **chemical works** at **Hauxton** (Newsletter 10, 2014). Even so in the 1940s the borough entertainments committee generously funded swimming galas at the bathing place (photo above).


Fun and games in 1948

By 1980 the City Council, worried about public health and possible litigation, had closed the bathing place. When, in 1989, the water industry was privatised, pollution control passed to the National Rivers Authority. It began testing the water and, soon after, the Environment Agency took over. By the end of the century the EA reported a small improvement but the scale of investment promised has not materialized. As we know, the struggle continues. We anxiously await the result of our **Bathing Water application**.

CAM VALLEY MATTERS No. 95 14 May 2024
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CVF's bid for **Bathing Water Designation** at Sheep's Green (Newsletter 85) has been successful. Do join our celebration 3.30pm to 5pm on 19 May. Three of our movers and shakers responsible (photo above) are looking not at all displeased. Jean Perraton (centre), author of Newsletter 94 and former CVF Chair has long been a wild swimming enthusiast with a keen eye on the recreational history of the Cam (5). Michael Goodhart (right) is an ardent advocate of swimming in the Cam, notably for example the annual Slow Swim from Grantchester to Sheep's Green. The intrepid Anne Miller (left) led the bathing water application (87) with the same kind of strategic thinking she brought to bear on floating pennywort (43) which more or less disappeared from the upper Cam, at her behest. Do also have a look at her analysis of CVF monitoring data in relation to **faecal pollution of swimming spots** in Cambridge. The catchment area of the Haslingfield sewage works shown in the map on page 5 is not widely known. Also see Anne's interpretation of recently-released Event Duration Monitoring (EDM) data revealing a dramatic **increase in sewage spills into the Cam in 2023**. Her lengthy and varied career as an engineer touched at one point on some informal research into water dowsing.

The line-up (photo below) for our much-appreciated and constructive meeting with the **Cambridge Water Company** (CWC) this year was a little longer than for the last (86). However, it must be admitted that disappointment in our unsuccessful call for a hosepipe ban (TUB, Temporary Use Ban) this summer was correspondingly greater. Natalie Ackroyd (Director of Quality and Environment for the parental South Staffs Water Company, photo below) deftly fielded what seemed to us to be strong arguments in favour. Drought Plan triggers are still being 'reviewed'. Michael Goodhart had been the main architect of our AGM TUB motion. Andy Willicott, Managing Director of South Staffs had previously given the impression in a webinar that he views a hosepipe ban, which amounts to not supplying unlimited water on demand, as mission failure.

At our meeting with Cambridge Water, our suggestion that a hosepipe ban might usefully increase public awareness of the impending eight-year crisis cut no ice - eight years being the minimum period from now until Grafham Water and the Fen Reservoir come on tap. The crisis will be managed by reducing leaks and by campaigning to reduce demand. The restoration of the old Fenstanton borehole in the Greensand may help. The standard measure of personal consumption is in litres per day. The failure of Cambridge Water bills to reflect this staggers on. It should be a simple matter for bills to convert cubic metres over the period of the bill into litres per household per day. The householder can then divide by the number of residents. Average national consumption is 142 litres per person per day. The target for Cambridge is 80 litres. How much do **you** use?

Discussion of water-saving methods, from Can for the Cam, meters, innovative tariffs, Eddington (93), to the Water Scarcity Group initiative and Wiszo tablets was wide-ranging. We grappled with the new Water Credits System. Much else was also discussed positively such as the Granta Catchment Resilience Programme (GCRP). For this a CWC Catchment Project Officer has been appointed. Water taken from this catchment is already restricted most summers.

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The CVF continues to beaver away on a broad front. Our recent **balsam-pulling** on the lower Bourn Brook was a great success but our impact was limited given the size of the task. Another session will go ahead on Sunday 21 July.

Politically, our approach to the **water crisis** is to advocate by lobbying local and national organisations and politicians with well-worked-out and constructive solutions. In May three committee members met Lord Chris Smith, former Chair of the Environment Agency, now Master of Pembroke College and also independent **Chair of the Cambridge Water Company**. He played a part in changing Company management after the River Granta dried up completely in 2019, acknowledging that the PRESENT RATE of ABSTRACTION FROM THE AQUIFER is not sustainable in the long term.

In June, some of us, along with Rupert Pearce Gould (Chair of CamEO, the Cam Ely Ouse Catchment Partnership) met Paul Leinster, now Chair of the **GCP (Greater Cambridge Partnership) Water Scarcity Group**. Paul Leinster was Chief Executive of the Environment Agency 2008-2015. We are optimistic that the GCP will recognise our well-established position (fundamentally **documented in *'Let It Flow'*)** and will be supportive of better future catchment management.

A current and, in the CVF's view, very important development for improving the health of the Cam Valley's watercourses is the rejuvenation of the **Cam Catchment Partnership (CCP)**. A small group of organisations and individuals including the CVF, the Wildlife Trust, Water Sensitive Cambridge and Cambridge Past, Present and Future have been working to reinvigorate the partnership, including designing its own logo and website. The **key purpose of the CCP** is to facilitate communication and collaboration among local groups in the catchment such as the CVF, and also to encourage the formation of working groups to facilitate action on the ground. The CCP will work with CamEO and the Great Ouse Rivers Trust to contribute to their regional view.

Several working groups within the CCP are being established. The **Granta Working Group** aims to build on previous and existing work in the catchment. It will also work with Cambridge Water assisting with the delivery of their flagship Chalk stream project and will learn from the useful and detailed information about the effectiveness of projects, in the specific context of the Granta, delivered by the Greater Cambridge Chalk Streams Project.

There will also be a **Water Quality Group**, led by Richard Sewell (CVF), which aims to encourage and support citizen science projects across the catchment by providing a network of local knowledge and expertise. What are the priority problems? How should data be stored? What knowledge, expertise, and equipment already exist?

The CCP has submitted a bid to the **Water Restoration Fund** primarily to be able to employ an officer, whose role would include coordination of the working groups, organising meetings, creating an outline catchment plan, supporting local groups and generally making things happen and facilitating information-sharing and partnership-working. The bid also sought funds for catchment mapping, project development and some feasibility studies. The result of this bid is expected soon. If unsuccessful other avenues will be explored.

If readers are interested in engaging with any of these activities, they should contact the CCP at the following address: info@rivercam.org.uk

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During the evening of the opening ceremony of the 2024 Olympic Games, CVF members (upper photo) were being stirred by our revisit (Newsletter 79) to the private **Mill River Nature Reserve at Shingay-cum-Wendy**, in its case opening to the public only by special arrangement, without ceremony. Once again our torch-bearer was Simon Saggers (lower photo), one of the reserve's triumvirate of movers and shakers.

The 75 acres offer text-book illustrations of vegetation management, pasture management by Belted Galloways, and the pasturing of sheep on the adjacent, historically-linked solar farm. Prodigious efforts have gone into the restoration of the Chalk stream (Mill River) channel, repairing historical damage caused by dredging. Ironically, the present turbidity is probably caused by the lingering generational enthusiasm for canalization on farmland upstream.

The particular attraction to the visitors was the wetland, at an advanced stage of preparation, downstream from the sewage works at Litlington, designed to remove phosphate from their outflow. The lower photograph shows one in the succession of troughs, in the process of being vegetated. Progress was unexpectedly hindered this wet winter, by flooding. Over the longer term it is speculated that discharges from local Chalk springs may have increased due to a rising water table as a result of the reduced rate of abstraction at the site of the former Marley Eternit cement works in Meldreth, thus drawing attention to non-domestic water consumption. We look forward to our invitation to return to Mill River in 2 or 3 years time.

Now that the Cam at Sheep's Green has received **Bathing Water Designation**, Anne Miller reports that the CVF Bathing Water team's focus has turned to identifying and fixing the sources of pollution.

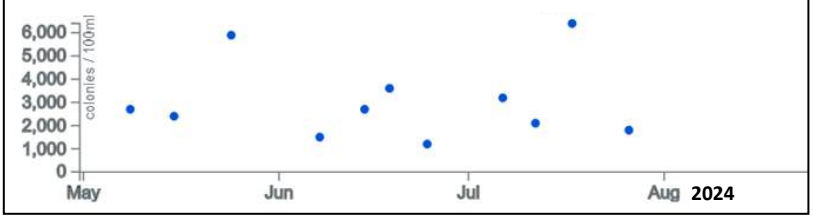
The Environment Agency's (EA) weekly testing is confirming the "poor" water quality classification expected for 2024 (see the E.coli graph below) so the EA and Anglian Water (AW) have started work aiming to identify the cause(s). The CVF team recently met both AW and the EA to discuss this, and to share our own work.

Although no "culprit" has yet been identified, AW's preliminary analysis suggests a correlation between high E.coli and heavy rainfall at Sheep's Green but, interestingly, not with actual storm overflows from the Haslingfield sewage works. Nevertheless AW is planning to install an additional tank at Haslingfield to reduce overflows.

We (and we suspect the EA) are concerned that the sewage pumping stations in Grantchester, Haslingfield and Harston frequently overflow in wet weather into ditches that drain into the Cam.

We are investigating these, so if you live nearby, and would like to help as a "citizen scientist" in monitoring these overflows, please email info@camvalleyforum.uk . The EA team is keen on our help. They also ask that if anyone notices an overflow from a sewage pumping station or anything that looks as if it might be illegal, they should phone the **hotline 0800 807060**, ideally on the same day. This then becomes evidence for future enforcement action.

EA water quality (E.coli) sample results at Sheep's Green, 2024
(Results consistently above 1000 are likely to result in a "poor" verdict for the season.)



CAM VALLEY MATTERS No. 98 26 August 2024
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A Thompson


A Thompson

A farmer may take up to 20,000 litres a day from any watercourse such as the Cam Valley Chalk stream in the photo above, or more if the EA grants an abstraction licence. So in this case **irrigating a potato crop** from the neighbouring stream is within the farmer's rights. Nevertheless conflict potentially arises between feeding us and earning a living on the one hand, and the well-being of the stream on the other. Piped ground irrigation is less wasteful but expensive. Who ***owns*** the water? The CVF advocates a general shift to the water commons model of resource management.

The CVF supports the proposed Chatteris **Fens Reservoir**, (the joint venture between Cambridge Water and Anglian Water) **in principle**. This is because it will allow Cambridge a source of (river) water other than the Chalk aquifer alone, and it will gather water from the downstream end of the catchment rather than exhaust the Chalk streams' sources at the upstream end. The CVF has responded to the phase two consultation.


Stonbury

Water Resources East (WRE) has issued an invitation to submit tenders for **designs of 'runoff attenuation features'** (such as earth bunds and temporary storage ponds) in the Upper Cam Catchment, in order to 'increase water availability, to improve groundwater recharge and therefore enhance and mitigate low flow in rivers'.

Outline planning permission has been given for 3,500 homes to be built on the **WWll Bourn Airfield**. The photo (bottom left) shows a new 8ML potable water tank built for Cambridge Water to serve 'new housing developments'. It is located near the north west corner of the airfield on the opposite side of the A14 (seen in the photo). It replaced an old tank (similar to the circular one in the photo) and was connected to the network in 2022. The tank has no bearing on the rate of abstraction from the Chalk, being a component of the distribution network. Eight megalitres of water would supply 3,500 homes with 100 litres per person per day for 10 days.

Over the summer, several CVF members attended the latest Get River Positive (page 9) meeting organized by **Anglian Water** (AW). **Richard Sewell** writes that these meetings are for river groups across the AW region whose members undertake water quality monitoring caring passionately about cleaning up our watercourses, networking, and sharing information. The meetings also provide an opportunity for **frank discussion and constructive criticism** of AW performance and plans. For example, AW engaged constructively with CURAT/NRG as a result of serious concerns raised about the Newport sewage works. Dr Katie Heppell (Queen Mary University, London) who manages citizen science projects in the River Chess catchment for the Chilterns Chalk Streams Project gave a superb presentation with plenty of food for discussion. Other valuable talks included an update on the UK-wide Rivers Trust CaSTCo which is developing standardised methods for use by citizen scientists to generate reliable water quality data and, importantly, a platform to store and manage this data.

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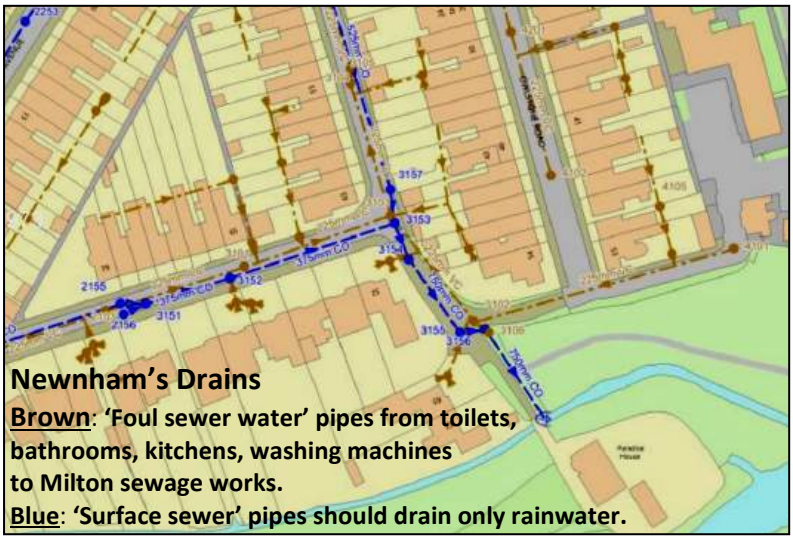
The sun set behind a happy group feeling all the better for a members' **autumnal guided walk** beside the Cam at Newport in September, led by Keith Baker of CURAT (Cam Upper Reaches Action Team). Of particular interest was the restoration of the Cam channel in the grounds of Wenden Mill and the planned 11 acre wetland restoration project at Belmont Wood, near the confluence of the Cam and Debden Water. Uttlesford District Council provided £12,500 for a feasibility study of this project. Newport Parish Council has also been highly supportive. The site lies in the part of Debden Water SSSI which has been rated as 'unfavourable - declining'. Only a glimpse between trees was had of Newport's fly in the ointment: its sewage works. Some significant news is eagerly awaited.



Newnham's Drains
Brown: 'Foul sewer water' pipes from toilets, bathrooms, kitchens, washing machines to Milton sewage works.
Blue: 'Surface sewer' pipes should drain only rainwater.

In October Anne Miller gave a formidable presentation to an appreciative and informed audience on the search for the **sources of *E. coli* pollution in the recently designated bathing water at Sheep's Green**.

She tentatively ruled out cattle on Grantchester Meadow but warned that builders may misconnect drains, sending 'foul water' into 'surface sewer ' pipes which are intended to drain only rainwater. The map above shows the network of (blue) 'surface water' pipes, which drain the streets of Newnham directly into the Cam at the Paradise Nature Reserve. Worryingly, after rain, *E coli* measurements at the outlet have been high, suggesting possible misconnections.

It is also a problem if misconnections divert rainwater into the foul water sewers, because then the sewage system is not able to cope with the volume of liquid. 'Clean' groundwater also can leak ***into*** foul water pipes. Dilute (but totally untreated) sewage then overflows onto the streets. Anne urged her listeners to call the Environment Agency on 0800 80 7060 to report suspected pollution incidents.

The conclusion of her talk about CVF investigations into the River Cam's water quality was that although **Anglian Water's sewage infrastructure** is not the sole cause of poor quality, it must be improved. Pleasingly (subject to Ofwat approval), the water company is planning to increase its investment at the Haslingfield sewage works from around £5m to over £30m. This will pay for ultra violet (UV) equipment to dramatically reduce levels of bacteria, viruses and protozoa; a much bigger storm tank; measures to remove surface water upstream from the network; and the introduction of phosphate stripping (to 0.6 mg/l).

In a national context, a professional expert, who attended the talk, rated the quality of **CVF 'citizen science' monitoring** at the highest level. For those interested in the quality of the Cam's water Anne's 5 April 2024 analysis is essential reading.

Our steady trickle of **TV and radio interviews** continues. Clara Todd and Anne Miller were interviewed by Hannah Pettifor, on 1 November for ITV news, about CVF's work on Sheep's Green (Clara in middle photo above) and about the 'March for Clean Water' in London on 3 November. Full use was made of the large coach Clara hired for the March where committee member Sue Wells (among others) flew a flag (photo above right). This was even as the **Chalk Stream Recovery Pack** (written by Charles Rangely-Wilson), promised by DEFRA last year, was being delayed. See the CaBA (Catchment Based Approach) Chalk Stream Restoration Strategy 2021.