

Chair: Stephen Tomkins Editor: David Brooks

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Waterlight: A portrait of a Chalk stream

The role of the River Mel in its local community was celebrated on 19 November 2019 in film, word, and song. The sell-out joint meeting of the Cambridge Conservation Forum (CCF) and the CVF in the David Attenborough Building was a triumph. The above photograph by Nigel Kinnings encapsulates, by itself, the *spiritual* value of the stream, with more than a nod towards the future.

The event included the Cambridge premier of the 40-minute film, "Waterlight: A portrait of a Chalk stream", masterminded by James Murray-White and Nigel Kinnings. This is part of the Waterlight Project, inspired by the Chalk stream, the Mel, about which <https://waterlightproject.org.uk/blog/> provides a rich and detailed source of information.

"Waterlight" began as a collaboration between the poet and writer Clare Crossman and filmmaker James Murray-White. The group expanded to include Bruce Huett the local expert. On the November evening, Clare read some of her poetry and she was joined by Penni McClaren and Bryan Causton who presented, with guitar accompaniment, local folk songs, including a version of one by Ralph Vaughan Williams, and "Waterlight" which they had composed. All to great acclaim.

Stephen Tomkins chaired a panel discussion with Ruth Hawkesley (Wildlife Trust), Rob Mungovan (fluvial ecologist), Mike Foley (bird and invasive plants expert), and Steve Hawkins the Chair of the Mel River Restoration Group which has worked tirelessly to improve the hydrology and ecology of the stream.

Stephen later wrote about the evening in the following terms. *"I thought the mix of genres in the film was so special, and, in my experience, genuinely unique. It was a wonderful word and picture image of 'place' and human belonging, of local history, social history, natural history and much more. The weave of the stream's images and sounds with descriptive poetry was technically excellent and deeply memorable. I can't wait to see it again. It was a brilliant idea and the whole project is a model of community achievement. The serenity of the film is the abiding impression. It's a gem....."*



Chloë Fitzgerald, in the Mel, 1984

Now there is another chance to experience the film; this time at the Storey's Field Centre, at Eddington, on 22 February with screenings at 10.45am and 12 noon. Full details at:

<https://www.storeysfieldcentre.org.uk/event/2020/02/toy-swap-shop-film-screening/>

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Rob Mungovan Wild Trout Trust

When is a Chalk stream a Chalk stream? When it looks like the River Shep on the right (notice the gravel bed), not when it has been 'canalised' like the Cherry Hinton Brook above? Coming from the Chalk spring at Giant's Grave on Cherry Hinton High Street the water in the Brook at least starts its journey with the temperature, mineral properties, and hydrological régime of a Chalk stream. However, in contrast to the River Shep, it flows over silt, anything up to 2 or 3 feet in depth. The City Council Drainage Engineer is currently planning to remove silt as far downstream from Cherry Hinton Hall as money allows. There is promise of exposed gravel!

As with many other streams in the Cam Valley, it was once fashionable to steepen and straighten the banks of the channel, thus deepening and widening it at the same time, to try to prevent flooding. The flashy Bourn Brook (on clay) is a good example of this. However, given the annual régime of the Cherry Hinton Brook there is only a very low probability that it might spill over (though run-off from the polluted streets of Cherry Hinton increases this probability). Neighbouring areas of housing to the south west are periodically flooded, but for different reasons. Further afield, modern flooding stimulates popular demand for 'dredging', at a time when modifications to catchment land use are increasingly considered to be more effective in flood control.

In the photo, top left, dredged spoil was deposited as a ridge ('levée') on the opposite bank from Snakey Path. The row of three prominent trees were planted on the ridge about 40 years ago. The tarmac of Snakey Path represents the level of the 'natural' (post-glacial) surface of the land which the Brook meandered across.



The photo on the right (both

lower photos are of unknown origin) was taken in 1981, before the Norman cement works were demolished in 1988. It seems that, by chance, both photos were taken from almost the same spot (near Daws Lane allotments). The 'old' photo on the left, with its thoroughly modified channel, may be post-1949 after the 'works' were 'rebuilt'. Note the absence of poplar trees in the left hand photo. Perhaps it joined the spate of dredging following the 1953 floods. Shall we ever know? Does it matter?

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Bacterial pollution of the Cam.

CVF committee members enjoyed meeting two charming and formidable members of a team of Cambridge University PhD students, seen



here, whose 'weekend hobby' has been to measure pollution of the water using DNA nanopore sequencing. Their website <https://www.puntseq.co.uk> offers an introduction to their work which began as a small project using a portable DNA analyser to discover and identify bacteria in the Cam at 9 locations from Byron's Pool to Baits Bite Lock (including the outflow point from Cambridge's sewage works). It was founded as a citizen science venture, making all its results available to the public, to determine the abundance of pathogens and other microbes in the river, as for instance recorded in <https://www.biorxiv.org/content/10.1101/2020.02.06.936302v2.full.pdf>

The **AGM and Annual Lecture**, on 10 March 2020 were richly informative. Business was dispatched without tedium. The **Chair's report** could not ignore that special relationship between stream flow, rainfall, and abstraction rates. Gratitude and admiration were expressed for our Manifesto and its widespread dissemination and recognition.

Mike Foley updated us on **invasive species** well beyond his normally all-consuming focus on Floating Pennywort and, more recently, Himalayan Balsam. He thinks we are close to the release of the weevil which will provide some degree of biological control of the pennywort, but that an improved strain of rust is still needed to suppress the balsam.

The grace and gentle ardour of our guest speaker did much to woo his audience. **Kye Jerrom** (photo on right) is the **Environment Agency (EA) fisheries technical specialist for the Anglian region**. He covers 507kms of river in the Cam and Great Ouse basins, and the Fens. To win over his listeners he presented some familiar EA projects in the Cambridge district, including that old favourite the Rush, on Sheep's Green, which he oversees. His many responsibilities include the monitoring and treatment of pollution events, disease prevention and management, the barriers to fish passage and their reduction, and the EA preference for habitat restoration rather than restocking. If the habitat is right, the fish will breed. Invasive fish, protected fish, the distribution of fish, and many other matters piscatorial were nailed.

*It was only after the AGM that the need for **anti-coronavirus measures** greatly accelerated, resulting in the cancellation of impending group field visits and work parties. Monitoring and campaigning will continue, however. Also since the AGM, the EA contacted us about a serious and previously **unknown outbreak of Floating Pennywort** along 1.1km of a drainage ditch which flows into Hobson's Brook. Helped by CVF, a group was set up to tackle it. The group consisted of the EA, SCDC, Hobson's Conduit Trust, CVF, the land owner (St John's College), and contractors funded by SCDC, the EA, and others. CVF volunteers will be involved at a later stage.*



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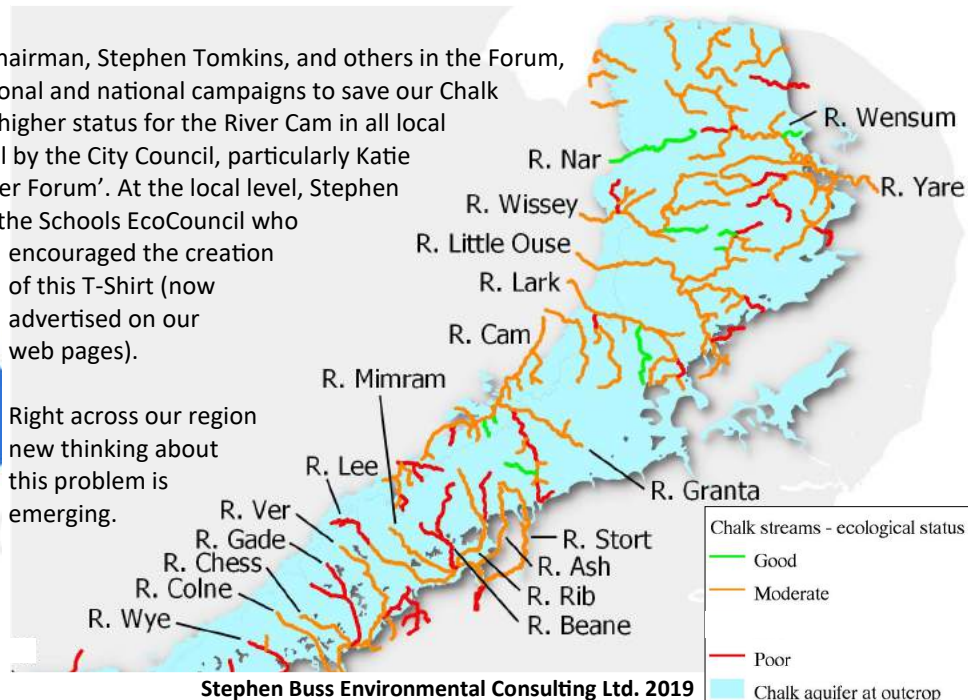
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The Cam and its neighbours. Our Chairman, Stephen Tomkins, and others in the Forum, are at the forefront of burgeoning regional and national campaigns to save our Chalk streams. Apart from CVF arguing for a higher status for the River Cam in all local planning, we have been supported well by the City Council, particularly Katie Thornburrow, who organised the 'Water Forum'. At the local level, Stephen enjoyed engaging with the children of the Schools EcoCouncil who

encouraged the creation of this T-Shirt (now advertised on our web pages).

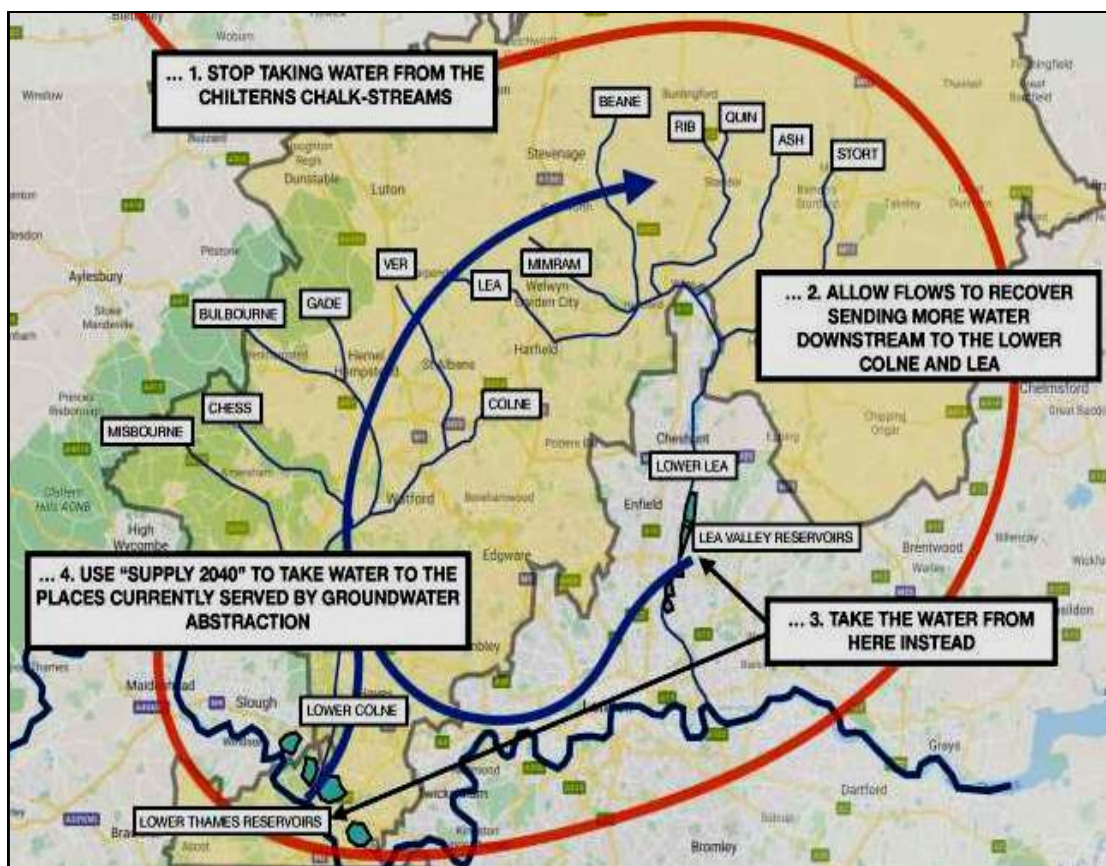


Right across our region new thinking about this problem is emerging.



For example:

How can the Chilterns' Chalk streams be 'saved'? The map below is by Charles Rangeley-Wilson and can be found



in his paper '**CHALK-STREAMS FIRST**' at <https://www.dropbox.com/s/onqn70cx62lfqjg/CHALKSTREAMS%20FIRST%20%28V3.5%29%20FINAL.pdf?dl=0>

It shows the area supplied with water by Affinity Water and illustrates a brilliantly simple solution: Stop abstracting water directly from the Chalk aquifer. Close the boreholes and let the Chalk springs and streams flow freely. Abstract the water instead from the Lower Lea and Lower Colne and store it in the reservoirs there.

This would allow the ecology to recover. Using existing and planned infrastructure, water would be redistributed to customers located in 'the places currently served by groundwater abstraction' (as symbolised by the blue arrows). Could the essence of this idea be applied to the Cam Valley?

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Following the publication of its **Manifesto**, the CVF has stepped up its efforts to enhance the health of the River Cam and to work for the very survival of its tributaries. Newly-appointed Hon. Sec. Dr. Alan Woods (photo on left) has led the preparation of a major document, **Let it Flow!**,

designed to inform the work of **Water Resources East (WRE)**.

WRE was formed in 2014 by Anglian Water in order to learn from international best practice on how to improve water resource management planning. WRE is now one of the five regional planning groups charged with preparing Regional Water Resources Development plans. The CVF document is our initial contribution to this collaborative effort.

Let it Flow! is available on the CVF website at <https://camvalleyforum.uk/publication-let-it-flow/>. The full Report can be downloaded [here](#) and the four-page summary with the 12 recommendations [here](#). Our overall aim is to end over-abstraction of groundwater and restore naturally healthy Chalk streams.

Though the Report is only an early step in an arduous journey, initial positive reactions have come from Water Resources East and other key organisations, including the Environment Agency (EA), Cambridge Water, Cambridge Conservation Forum, Natural England, the Rivers Trust, the Wildlife Trust, the Thetford River Group, and South Cambridgeshire District Council. A useful meeting has been held with the consultants working on an integrated water study for the Greater Cambridge Local Plan. The Report will also be part of the CVF contribution to the next draft EA River Basin Management Plan.

Goodness knows how many **watermills** have been constructed in the Cam Valley. The 1086 Domesday Book mentioned 8 in the village of Meldreth alone, including **Topcliffe Mill** (photo below, taken in the 1930s) which must be one of many hundreds in the whole Cam basin. (With what cumulative disturbance to hydrology and ecology, incidentally?)

Owned by St. Thomas's Hospital, London, from 1553-1948 it ceased operating in 1942 though most of the machinery is still intact. During its working life its wheels had been undershot and overshot at different times. An EA gauging station is located just upstream.



Since 1942 the residential mill buildings have been extensively renovated and extended. The mill's history is being actively researched, and detailed information can be found on the Meldreth local history website at <http://www.meldrethhistory.org.uk/>

'RIVER FRIEND' is a series of 'riverine/riparian' booklets by two CVF members, **Dr. Sylvia M Haslam**, a distinguished Cambridge University botanist, and **Tina Bone** the professional artist and publisher. Already available are 'A PROLOGUE TO THE SERIES'; a highly topical 'BOOK 1, DRYING UP' with some specific references to the Cambridge area; and 'BOOK 2, STREAM STORY' about the River Brue in Somerset. The next book on plants is expected shortly and details can be found at <http://riverfriend.tinasfineart.uk/>

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The 'River' Beane, in the Chilterns



Charles Rangeley-Wilson

Where have all our rivers gone? Like the proverbial swan, the CVF may have been presenting a picture of serenity lately. Make no mistake, there has been strong paddling below, especially by our Secretary Alan Woods. The CVF statement Let it Flow! has been widely circulated and recognised as a landmark. We are much aided by the state of Chalk streams having caught a national mood. **Feargal Sharkey**, the widely-known pop singer has been using his voice to widen awareness with telling argument. There is now an **All Party Parliamentary Group on Chalk Streams**. **MPs Daniel Zeichner** (Cambridge) and **Anthony Browne** (South Cambridgeshire) are both members.

The time is ripe to send a handwritten letter to your MP expressing your despair at the state of our Chalk streams, asking him or her to take up your concerns with **Rebecca Pow, MP, Parliamentary Under Secretary of State at Defra**. Whether your interest is over-abstraction, ecology, pollution, or whatever, you can be brief and to the point. For example: ***I'm worried about phosphate from sewage works discharges causing eutrophication in our Chalk streams. I gather that current legislation, from 29 years ago, requires phosphate to be stripped out only from those sewage works that serve more than 10,000 people. This threshold should be reduced dramatically, to include all works serving more than 2,000 people, at least where sewage works discharge into Chalk streams. Please can you press the Minister, Rebecca Pow, to strengthen the relevant Regulations?***

Anthony Browne MP is working closely with us and Water Resources East, raising our concerns with Ministers and calling for a Defra Chalk Streams Task Force to develop a Chalk Streams Strategy. A new policy framework is needed to ensure that Chalk streams flow naturally, every year, throughout the year, in all weathers. He is also helping us to take our case to the regulators and water companies.

There is good news from the **Chilterns** (see photo above). **Affinity Water** has confirmed their commitment to stop or reduce groundwater abstraction from several catchments by 2024. Their future work will presumably be informed by the joint **Affinity Water/Thames Water/Arup project** to determine exactly what 'near-natural' flows they should aim for. **Dr Joe Stallard** is the CVF representative on their Advisory Panel. All we need now is for Affinity to extend its policy northwards to our groundwater supplying our upper Cam tributary springs. And for **Cambridge Water** to follow.

CVF has been in consultation with a wide range of organisations ranging from the EA (e.g. misuse of glyphosate) and the Chalk Aquifer Alliance to the Wild Trout Trust and Salmon & Trout Conservation. Powerful and robust responses have been submitted relating to a range of proposals from the Cambridgeshire Green Infrastructure Strategy, the Greater Cambridge Integrated Water Management Study, and the Defra Environmental Land Management policy discussion document, to the proposed relocation of the Milton sewage works.

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The Conversation CCO



Mink the carnivore

Ben Andrew RSPB



Water vole the vegetarian



Vince Lea the trapper

Vince Lea of the Countryside Restoration Trust (CRT) has been trapping the evasive, invasive non-native North American mink for many years, starting in the Bourn Brook and extending into the Upper Cam Valley. They have all descended from escapees from mink farms. Clear evidence of his success has been some return of the water vole population on which they predate. The trouble is that mink can travel long distances through water, or overland, so eradication requires a broad regional strategy. Vince has therefore joined forces with East Anglian **Waterlife Recovery East** <https://waterliferecoveryeast.org.uk/> which has the further advantage of additional clout when applying for grants.

The photograph above shows the traditional trap on a raft with a clay tray to record the spoor of any passer-by. Now, **smart traps are available**. These send a signal to a distant receiver when the trap has sprung. A raft, trap, and alarm unit **cost £250** and Cam Valley Forum is making £750 available for the purchase of three such kits.

However, volunteers are needed to form a **network of**

smart trap responders. To reduce the mink population to zero requires a network of smart traps operating for several years while similar eradication programmes are in operation across East Anglia. Having a network of responders means that these traps can operate 365 days a year, whereas now, whenever Vince takes a holiday or has work trips outside the county, he has to close all the traps.

Responders will need to be able to get to trap locations at short notice, preferably within 2 hours of the alarm (or at first light if traps are triggered during the night). **Animal welfare regulations require 24 hours maximum but we aim for a 12 hours response time at the longest.** Bear in mind that traps can catch non-target species such as water voles and moorhens, and the sooner they are released the better. Furthermore, during the breeding season, catching and dispatching a female mink can quickly lead to a succession of 'following' males – some have been caught in traps within 2 hours of resetting them when the pheromones are flowing.

If anyone would like to get involved they would need to be able to travel to remote river locations and work safely, reporting directly to Vince Lea on arrival at the site and on completion of the mission. **Volunteers will be trained in the despatch method.** A pair of combs is used to keep the mink motionless inside the cage to ensure that there is a clean shot. Volunteers can be provided with an air pistol. Pellets are of tungsten, not lead.

*Incidentally, 17 million farmed **Danish mink are currently being culled** because some are infected with a mutation of Covid-19. Travellers from Denmark to the UK must quarantine.*

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We welcome signs that our local water companies are facing up to some serious challenges. The Cambridge Independent reported on 25 November that Cambridge Water are 'considering all options to remove pressures on chalk streams', including demand

management, bulk imports of water from neighbouring companies, and new reservoirs. To the south, Affinity Water is already reducing abstraction from the Chalk and has told us that their commitment to end unsustainable abstraction 'applies to all chalk rivers not just those in the Chilterns.' Meanwhile, Anglian Water already has work in hand to transfer surplus water from Humberside to Essex via Ely.

No matter how many new houses Cambridge planners permit, and however extravagant their occupiers, Cambridge Water is required by law to supply all the water they want. We want them to reduce current levels and meet new demand not from the Chalk aquifer but by importing water from elsewhere. Once we get new reservoirs to capture winter flows they can start to reduce borehole abstraction, so that Chalk streams run all year, every year, whatever the weather.

Encouraging customers to consume less should help too, in theory, but what of our own behaviour? Raising the price of water to reduce consumption is politically difficult but the Government has recently told OFWAT and the water companies to find solutions to our water supply challenges that 'provide the best value to customers, society and the environment, rather than simply the lowest financial impact'. That is a significant and encouraging shift in policy.

At a recent Zoom (https://youtu.be/YV3_Ca8CE5Y) meeting called by local activists, Feargal Sharkey did much to stimulate and inform a large audience. We are having a wetter-than-average winter after five drier ones but more rain cannot be relied upon to solve a crisis created by decades of unsustainable practice. The big challenge now is to help the water industry find solutions that deliver not only secure supplies but also a healthier and cleaner water environment.

Alan Woods



Meanwhile, Signal Crayfish abound. The American,



invasive Signal Crayfish was introduced into the UK in the 1970s, to farm for human food (photo of the crustacean

above). Up to 6 inches long, having escaped from enclosures, it has displaced the small, native White-clawed Crayfish, being much more aggressive, as well as being a voracious predator, consuming almost anything it finds including plants, invertebrates, snails, small fish, fish eggs and, even, its own young. It carries a fungus disease which is fatal to the natives but not itself.

It has reached plague proportions in many parts of the UK, including the Cam Valley, along the Bourn Brook and the River Shep for example. Small surviving outliers of the White-clawed natives in South Cambs are particularly vulnerable to the destructive advance of the invaders. Though thwarted by Covid the River Mel Restoration Group is planning to use traps to assess their density and distribution (but see www.crayfishuk.org/wp for complications arising from the use of conventional traps).

The invaders destabilise river banks by digging burrows up to 3 feet long. The banks collapse, the channel widens, material accumulates on the channel bed, and covers the sand and gravel used by spawning fish. The female incubates more than 250 eggs under her tail, each year.