



WATER CRISIS FORUM: FINAL REPORT

January 2020 v2

“It is clear from the evidence given by the organisations who took part in the forum that if current trends continue, with inadequate rainfall, increased water use for business and domestic use, and increased abstraction from the water aquifer then we could have too little water for our needs, and that this could cause significant damage to the ecology of our chalk streams”

CLlr Katie Thornburrow

The Forum on the Water Crisis

November 5 2019
Guildhall, Cambridge

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Participants

Cllr Katie Thornburrow (Trumpington) - chair
Cllr Rob Cantrill (Newnham)
Cllr Anna Bradnam (Milton & Waterbeach)
Cllr Graham Cone (Fen Ditton & Fulbourn)

Rapporteur: Ben Neely

Introduction

I convened this forum to seek evidence about the water crisis facing Cambridge and the surrounding area, focused on the tributaries that feed the River Cam, because it has become clear that the current situation cannot continue. Put simply, unless we acknowledge the current problems and take action to deal with them then we will not have enough water, of high enough quality, to support the region in future and to preserve precious natural resources such as our chalk streams and animal and plant species that rely on them.

The necessary action is beyond the scope of the City Council or other local bodies, but we can highlight the issue by assembling evidence from those with expertise and that is what I have sought to do here, and we can use what influence and authority we have to move towards a long-term solution that takes full account of the available evidence.



Nine Wells

At the forum six expert bodies presented their evidence for ten minutes each before taking questions from a panel of four local politicians representing Cambridge City Council and South Cambridgeshire District Council: Cllr Katie Thornburrow (Trumpington), Cllr Rob Cantrill (Newnham), Cllr Anna Bradnam (Milton & Waterbeach) , and Cllr Graham Cone (Fen Ditton & Fulbourn). A number of local groups also made representations.

I would like to thank all those who took part for sharing their time and expertise, and am grateful to Cambridge City Council for making the Committee Room at the Guildhall available.

The publication of this report was delayed by the unexpected General Election.

Katie Thornburrow
January 2020

The Water Crisis Facing Cambridge

It is clear from the evidence given by the organisations who took part in the forum that if current trends continue, with inadequate rainfall, increased water use for business and domestic use, and increased abstraction from the water aquifer then we could have too little water for our needs, and that this could cause significant damage to the ecology of our chalk streams.

There is an acknowledged tension between the need for water to drink and supply industry and the need to sustain the local ecology, especially the chalk streams which are a distinctive feature of the local landscape. At present we do not have a clear path to resolve this tension.

We learned that in May 2019 the drought plan was activated and, SSW have increased monitoring across all sites, increased water efficiency communications and meetings with the EA/Defra as part of the National Drought Group provide water remains even in times of drought and the plan is based on supplying consumer demand. So, even if a drought is acknowledged, SSW's obligation is still to supply customers with water, although with regard for the environment.



Hobson's Brook

There was a lot of concern for the health of the chalk streams in the area. These are a globally rare habitat in Northwest Europe and an important habitat to the UK - our equivalent of rainforests. They are hugely important for supporting biodiversity, as they support a wide range of flora and fauna including freshwater sponges, brown trout, and mayflies. They have social / historical importance: and have inspired artists and poets like Constable Byron, and were important to the industrial revolution where mills were built on the steadily flowing rivers.

These rivers have been with us for a long time. The Crenoba Alpina flatworm is evidence that these springs do not dry up, as they have been present in the chalk streams for 10,000 years. When they dry out whole ecosystems suffer. As well as small fish, unobserved species such a Bullhead fish, spined loach, white clawed crayfish and stone loach die out.

Water quality is also an issue, and the Cam Valley Forum told us about the issues around water quality in the Cam, Rhee, Granta and tributaries.

The wider issue of water supply was raised by all participants. Cambridge water comes from the chalk ground water, with around 60% going to supply taps, 20% for agriculture and industry, and 20% returned to streams and rivers in a process called 'augmentation'.

Augmentation is keeping the rivers flowing, but the general public are not aware of this. The pumps used for augmentation are vulnerable to power cuts – they are not sustainable.

Rain replenishes the aquifers – particularly in winter – and supplies the streams and rivers. Over the last quarter century rainfall has varied annually, but the average is fairly constant. In East Anglia West there is a current rainfall surface deficit. 2012 was the wettest year on record, but rainfall has declined since then and we are now back in drought.

Rainfall alone is not the issue – the increased demand for water must be met by the water stored in the ground. The real problem is when abstraction is too great relative to the input of rain. Under the current system, there is a limit to the recharge capabilities of the chalk stream aquifers. It was noted that three very wet winters would help, but we cannot guarantee these.

Water companies have a legal duty to supply water for domestic purpose and to plan for the future supply of water whilst regarding the environment. However, there are major challenges - all the water is coming from aquifers and over 40,000 new properties are to be built in the area, which will increase demand for water. This is a real challenge and will increase the stresses already placed upon the chalk stream ecosystem.

Leakage reduction is a key part of managing demand. For the first 5 years, the savings are equivalent to 1500 properties water use (year on year savings). But as you get closer to minimal leakage, the savings become less significant.

Positive water management needs leadership. The planning system could help but it needs reform, so that water use objectives can be set at the start of the planning process. We do have positive examples, e.g. Eddington, and can learn from them.

While water companies do have representation and input on local plans, they have no control. They have advised new developments to target water consumption levels of 80-90L per person per day in each property. This is possible, using water metering and water labelling, and has been done in Denmark. It would likely require legislation to enforce this behaviour and make water efficiency a key part of buildings regulations. Education of consumers is also needed.

There is also a need to take a wider view, as the Cam chalk catchment is shared with counties such as Hertfordshire, who actually have a bigger problem in terms of drought / water shortage. They noted that cross-boundary / county management & non-communication makes things more difficult, and pointed out that while the Environment Agency has done a good job surveying, their funding is being cut.

The Environment Agency have recognised the pressure and not issued any new abstraction licenses since the droughts in the 90s – but this doesn't resolve the situation we are facing. Current levels of increased water use are causing problems when we don't see sufficient rainfall over winter.

Bringing in water from other places to deal with this is difficult – it is possible, but needs infrastructure. In theory, could make a canal from Lincoln on 10m contour down to the 5m contour here (bring Trent / Humber water down - drain west, move east). But bringing water in through large infrastructure like this, would be on the scale of something like HS2, which is being opposed. Furthermore, there is no specific body to deal with this – but Water Resources East could look at it.

It was valuable to hear the views of local residents. FeCRA made the case that rivers should have rights and that relevant bodies like the Greater Cambridgeshire Partnership should consult more fully on plans that affect rivers, such as bridge building. The Schools Eco-Council called for re-usage of water in housing and a wider programme of water education.

All four of the councillors who took part agree with the view expressed by all participants that we have a shared responsibility to look after water resources, and that we are facing a serious crisis which needs action. However, we remain hopeful that we can improve the situation and do things which will help us address these problems. Any action needs to be based on evidence, including that of ecologists, so that we do not waste efforts.

Finally, the specific points that we wish to emphasise are:

- The changing climate and a recent run of dry weather is a major problem over which we have little control.
- The river needs less dredging and better management to ensure good water flow.
- Growth along current lines poses a serious challenge.
- On average each person consumes 140l of water per day, so a growing population creates more demand.
- Industrial developments can be very heavy users of water.
- Make water efficiency a key part of buildings regulations.
- Water companies can do more to improve the supply, especially around leakage.
- Greater use of water meters causes water consumption reduction.
- The lack of specific environmental protection for chalk streams makes the situation harder to deal with.

Appendix: Record of the Meeting

Schedule

0945	Doors Open	
1000	Start event	Cllr Katie Thornburrow
1010	Evidence session 1	Cam Valley Forum - Stephen Tomkins Bob Evans
1035	Handover	
1040	Evidence session 2	Wildlife Trust - Rob Mungovan on behalf of Ruth Hawksley
1050	Evidence session 3	Wild Trout Trust - Rob Mungovan
1115	Handover	
1120	Evidence session 4	South Staffs Water - Daniel Clark
1145	Handover and break	
1200	Evidence Session 5	Environment Agency Ali Taylor, Rob Bakewell, Andrew Chapman
1225	Handover	
1230	Evidence session 6	FECRA – Wendy Blyth CB School Eco-Council Hobsons Conduit Trust – John Latham CCC ecologist – Guy Belcher
1300	Summing up and Close	Cllr Katie Thornburrow

The forum was open to the public and was live streamed by Anthony Carpen.

These are the notes made at the event by the rapporteur. They have been shared with participants and amended appropriately and are believed to form an accurate record of proceedings.

The event began with a general introduction & welcome from Cllr Katie Thornburrow. There were then six evidence sessions, each followed by a discussion led by Cllr Thornburrow.

Session 1: Cam Valley Forum

Presenting:

Stephen Tomkins – Chair, Cam Valley Forum

Bob Evans – ARU research fellow on soil science

Bob Evans: Mainly concerned with soil erosion. The chalk streams are not flowing as they should be, or as they used to be – some have not flowed since late 1960s.

Stephen Tomkins: The Cam is important for this area, central to its history. The summer 2019 flow of water on the Cam was miniscule and mostly constituted 'recycled water'.



FeCRA, Wildlife Trust, Cam Valley Forum and Cllr Katie Thornburrow Observing The River Granta

The chalk rivers are running dry. Often when rivers are on effluents to support their flow.

Over-abstraction is a key issue. But over-abstraction is not a new problem – it has been happening for 130 years.

We need to look at population increases and water demand increasing in relation to abstraction.

Worst pollution in the: Cam, Rhee, Granta and tributaries. All had 'Poor' water quality in 2016.

The Cam chalk catchment is shared with other counties to the South – such as Hertfordshire, who actually have a bigger problem in terms of drought / water shortage. Cross-boundary / county management & non-communication is not helping the crisis.

The EA surveying – from 2016, have done a great job of monitoring. But their funding is being cut.

The 'poor' river quality in Cambridgeshire is attributed to the lack of water / low flow of the tributary rivers.

Rainfall data (23 years of data) has shown that rainfall is variable, but has remained at a fairly constant average. The river flow relates to rainfall: to get any flow in the river, we need over 200mm winter rainfall (winter rainfall is more crucial than summer rainfall for replenishing the aquifers). So rainfall is not the issue – abstraction is too great relative to the input of rain, which is the issue. The groundwater system will not recharge when there are consecutive dry winters + dry summers. We cannot continue to sustainably augment streams in summer if rainfall is low.

The Granta at Stapleford was still dry in September this year. Even with three months of augmented supply at Linton.

We get all our Cambridge water from the chalk ground water. Current water supply in our taps is 62% of the abstraction from the Cambridge Chalk whilst a further 20% is used for augmentation (the rest is used by agriculture and industry).

- We are a water stressed region
- Droughts are likely and this will lead to further drying out of ground water and rivers
- We need an increase in water resilience planning
- More open discussion of the problem - water consumption needs to be talked about
- We don't have enough water currently, and with developments planned we will need more
- Can we phase out abstraction from the Cambridge Chalk to avoid losing the rivers?

Session 1 Questions

Rod Cantrill: What forms of additional legislative protection can be implemented? How can this be done? Who can do it?

Stephen Tomkins: serious conservation effort is needed to act on river flow and improve river health. This needs conservation legislation.

Bob Evans: EA & Cambridge Water Company (CWC) have some input on planning, but doesn't the power really lie with the local authority? CWC know there is an issue, but they cannot necessarily act on it due to their obligation to supply – they cannot stop planning for further abstraction.

Anna Bradnam: The maps show that this is not just a problem for Cambridge. This is an East of the UK problem. Where do we need to lobby for national water infrastructure to help this situation?

Stephen Tomkins: Central government should be addressed for this kind of infrastructure. We did not think ecologically when we began planning extraction of water and that has continued until now.

Graham Cone: What are the biggest causes of over-abstraction? What do we do about the housing already included in the local plan vs. needing to reduce water use?

Stephen Tomkins: 'Fulbourn' means stream full of birds. The wetland there slowly lost from 150 years ago. And this summer – the Wilbraham river was completely dry throughout and this certainly affects biodiversity.

Bob Evans: Three very wet winters would help. If that doesn't happen (which is likely) we need to bring in water from elsewhere. Currently we are pumping more water out than the natural system can give back. Bringing in water from other places to deal with this is difficult – it is possible but needs infrastructure.

Stephen Tomkins: We are here to fight for the river - not my decision to make r.e. housing demands.

Katie Thornburrow: What is keeping the river flowing?

Stephen Tomkins: Rainfall. Sewage treatment. Anglia Water lost a court case against the Cam Anglers – this might be in the news in the next few days. The cam is essentially a 'canalised pond'.

Anna Bradnam: The whole of East England is suffering. Is major infrastructure to bring water in from elsewhere the answer?

Stephen Tomkins: Possibly. Could bring Trent / Humber water down (drain west, move east). In theory, could make a canal from Lincoln on 10m contour down to the 5m contour here. But bringing water in through large infrastructure could be on the scale of something like HS2, which is being opposed.

Dan Clark (South Staffs Water (SSW)): There is lots of growth planned for Cambridge. We are looking at how to plan sustainably for the water system. This issue is bigger than just Cambridge – Water Resources East are looking into it currently.

Session 2: Wildlife Trust

Presenting

Rob Mungovan on behalf of Ruth Hawksley.



Hobson's Brook

Rob Mungovan: Groundwater is the fundamental support for the chalk rivers and their subsequent flow. The chalk rivers are not, historically, prone to flooding. Only 3 rivers in the Cam catchment are currently classified with a 'good' status – this is only because they do not have effluent flowing in them.

Rob then discussed various rivers in the chalk catchment:

Cam, Granta, Rhee, Shep, Mel, Hoffer Brook, Mill River, Wellhead Springs (has run dry), Nine Wells – has run dry, Vicars Brook (potential for conservation / restoration), Cherry Hinton Brook (suffering at the moment), Coldhams Brook (potential for conservation / restoration), Wilbraham river system, Quy water, The Lodes (channels), New River Exning, River Snail.

Chalk rivers are an important habitat to the UK – they are globally rare habitat in Northwest Europe: our equivalent of rainforests. We must not let them suffer. They are hugely important for supporting biodiversity, support a wide range of flora and fauna: freshwater sponges, brown trout, mayflies...

Also social / historical importance: artists and poets inspired by our rivers (Constable, Byron). Supports industry throughout industrial revolution – lots of mills testament to the steady flow on chalk rivers vs. clay rivers.

The river needs less dredging, better management. It needs good water flow. Keeping rivers flowing by pumping water in would astonish previous generations.

Session 3: Wild Trout Trust

Presenting:

Rob Mungovan

Rob Mungovan: Wild Trout Trust understand the importance of rivers for communities – integration of people of various ages through river protection initiatives.

Two-thirds of the Cam's flow is missing vs. the long-term average. The Granta should be 29km long but was dry at times in September and October.

Rivers on the chalk basin are struggling more than rivers not on this catchment. We need river resilience to have a chance of coping with Climate Change. Augmentation is keeping the rivers flowing, but the general public are not aware of this



Nine Wells

The pumps are vulnerable to power cuts – they are not sustainable. Been suffering 'river anxiety' for 25 years. The pump for the Shep River was what kept it flowing, would go to check it after a storm to see if the switch had been tripped. Hitchin to Thetford is supported by a pumped network. A major power cut could be catastrophic – the system is not resilient. But, without the pumps, we would not have the river – so there is some value.

Misbourn, Ver, Fulbourn rivers have dried up / gone – but it is not too late. Sustainable water usage – water in underground storage cells run out at 'green rate' isn't a good option – it causes grey water to be flushed out by rainstorms. This is not the kind of water we want in our rivers. Planning policy could be better.

We need much more from planning departments – can we slow down development? Can we integrate the science into development? Can we negotiate for good quality sustainable water storage? We know this is an issue, why aren't we tackling it from the start of the planning process? The use of underground water storage should only be where absolutely necessary – swales and ponds for storage are a better option.

Treated sewage effluent as the source for the river flowing is not good enough.

Invasive species are an issue – crayfish and Himalayan balsam.

Other issues: algal blooms (resulting from trapped water heating up) and herbicide use on water courses (particularly dangerous in low flow).

It's not just fish dying – it's the whole ecosystem suffering. The most at risk species are the ones people don't see. Small, unobserved species such as Bullhead fish, Spined loach, white clawed crayfish, stone loach.

The state of the river (and the species present) is not natural when we look at longer timescales. Comparison to species that have been stable since previous glaciation, now being threatened: *Crenoba Alpina* flatworm still persists – evidence that these springs do not dry up as they have survived 10,000 years.

Hoffer Brook - has been restored, but needs doing again. Spawning areas are key for trout. The river needs stability of flow and habitat. Need to think about shadowing from overgrown flora too – we want some shadowing, but not 'tunnels' of trees shading the river, stops growth of any river based plants, which support aquatic species.

The less water there is the rivers, the fewer species. Short lived species like brown trout (5yr lifespan) die out, whilst longer lived (e.g. Chubb, 20yr lifespan) will persist. Less water also means more barriers for fish – so they will travel less. E.g. Foxton bridge on the Rhee is impassable in low flow, as is the gauging station – this restricts fish movement, they cannot jump over barriers like this.

WTT surprised to be talking at this event – they are not campaigning. But still grateful because they care about the river. Dialogue is needed. Facts need to be explored.

Closing Question posed from Rob Mungovan: Why wasn't the drought talked about earlier this summer?

Sessions 2 & 3 Questions

Anna Bradnam: The public cannot see the river level being low, presumably due to weirs / gates? What happens when the river flow drops completely?

Rob Mungovan: In cities, the duty of the river is for recreation and navigation – that's why we have lots of gates and why water levels seems constant on navigable rivers. But, when water is held behind barriers, it warms, allowing algae to grow, which can lead to oxygen removal (especially at night when photosynthesis is reversed).

Oxygen depletion could occur – it isn't at the moment, but it could. The low flows of impounded water contribute to these issues, as do barriers to water movement – they cause increased silt / sediment build up which can be expensive to remove.

Graham Cone: How can planners use alternative water storage and usage methods in planning?

Rob Mungovan: Look at Cambourne – Lambs Drove. A partnership between council and Anglian water enabled slow flows using open swales. This provided an interesting environment for local residents. There are fees associated with managing this type of land

creation, but arguably, the long-term costs of maintenance of green (inc. water course) space is cheaper than underground water tanks (inc. replacements and servicing).

We need to look at planning from the start – water use objectives need to be set at the start of the planning process. Positive water management needs leadership. Look at positive examples, e.g. Eddington. Look at the best practice and copy it.

Rod Cantrill: At the moment chalk streams need intensive care. What are your three priorities for immediate action to avert the water crisis?

Rob Mungovan: have an independent investigation into the water balance. There is lots of data to go through. If we accept we have had 3 dry winters, when do we bring the CWC plan into play? We should try and choose a mini-catchment to focus on (Mini-Grafton springs to mind). We need to reduce abstraction from boreholes. Bring forward investigation on these issues. So:

1. Water balance independent investigation.
2. Drought plans from CWC should be enacted upon.
3. Trial mini-catchment – e.g. mini-Granta.

We lacked a sense of urgency in 2019.

Katie Thornburrow: Would a mini-catchment replenish biodiversity?

Rob Mungovan: Rivers have an amazing ability to recover if there is connectivity in habitat – ‘wild’ means letting animals and plants do it through natural processes. We want to promote natural processes. It’s difficult to move species – you don’t know which individuals you are taking, may not get healthy population, or not enough (or too much) or a population – lots of issues here. We should focus on making rivers more resilient and connected. Then we can make sure they flow, then we let nature run its course rather than interfering.

Anna Bradnam: Is Cam Valley water being used in other areas?

Rob Mungovan: Water companies have a demand to supply. No evidence, but from spending time on the river and seeing the flows reduce yes, water is being used to much, and from various sources.

Session 4: South Staffs Water

Presenting: Daniel Clark – water resources and Environment Manager (Cambridge Water / South Staffs)

Daniel Clark: The water company has a legal duty to supply water for domestic purposes. Statutory duties to plan for the future supply of water whilst regarding the environment.

However there are major challenges - all water is coming from aquifers and over 40,000 new properties to be built in the area, thus increased demand for water – this is a real challenge.

The increased demand for water must be met by the water stored in the ground - there is a limit to the recharge capabilities under the current system.

Leakage reduction is a key part of managing demand

Water Resources Plan

- Reducing abstraction – 8.9 million litres per day reduction
- Capping the abstraction of water from chalk
- Population can grow, but some demand and increased water abstraction can be offset by reducing leakage (equivalent annual savings of approx. 1500 households water use).

Rainfall graph discussion...Note 3 winters below average effective rainfall, that recharges aquifer.

Current drought series looks similar to 1990 – droughts are natural and do happen.

Drought Plan Activation

There has been less rainfall to recharge the aquifer than normal. Since the May 2019 drought plan activation, SSW have: increased monitoring across all sites, increased water efficiency communications, meetings with the EA/Defra as part of the National Drought Group. It is unlikely that a hosepipe ban will be introduced until 2021, there is reliance on the future rainfall.

The responsibility of the company to provide water remains even in times of drought. We need >120% of long-term rainfall to be in a better position next summer.



Nine Wells

Session 4 Questions

Rod Cantrill: an issue of supply and demand. Rainfall seems constant, is demand the problem? Why was the trigger not taken earlier? The drought status was acknowledged, but nothing has been done? How are the triggers enacted?

Daniel Clark: The drought plan is based on supplying consumer demand. So even if a drought is acknowledged, our obligation is still to supply customers with water. There is 'regard' for the environment.

Rod Cantrill: (Drawing on Stephen Tomkins: 'Cheat nature and nature will cheat you') – are the obligations to the customers or to support the environment? What are the concerns, consumers or the environment?

Daniel Clark: Both. Both, but current legislation means that water supply comes first.

Anna Bradnam: Have you considered reservoirs?

Daniel Clark: Underground chalk is essentially just a reservoir, but it is depleted due to lack of rainfall

Anna Bradnam: Why weren't reduced abstractions considered earlier?

Daniel Clark: We have been monitoring the situation. The May activation was the first step. But we also have a duty not to cause panic amongst the public by activating too soon.

Anna Bradnam: Are you pumping water to Hertfordshire?

Daniel Clark: No. All of our abstraction is for supply in Cambridge. But when you look at the maps, we are not the only abstractor / public water supplier in the catchment.

Anna Bradnam: Do Affinity Water have boreholes in the catchment?

Daniel Clark: Yes.

Graham Cone: What is the figure for water savings through leakage reduction? How effective is it?

Daniel Clark: for the first 5 years, the savings are equivalent to 1500 properties water use (year on year savings). But as you get closer to minimal leakage, the savings become less significant.

Graham Cone: Have you invested in consumption reduction strategies? Can you give more information on consumption reduction?

Daniel Clark: We have done consistent work on this. We want people to move to using water-meters, but not everyone wants to do this – we cannot force people. We are researching on what we can do in the future to reduce consumption.

Katie Thornburrow: Are there limits on how much individuals can use? Can there be legislation on this?

Daniel Clark: We supply the water. But for large consumers there are separate retailers, who we supply. They are responsible for education on water use. Businesses / commercial side is out of our control. Would like to see more domestic efficiencies on water usage.

We do have representation and input on local plans, but no control (non-statutory consultation). We have advised water consumption in new developments; the target is for 80-90L per person per day in each property. This is possible, using metering & water labelling – it has been done in Denmark.

Legislation should be changed to enforce this behaviour. Working with developers and incentivise sustainable water consumption in new developments. Work with Cambridge University on Eddington is an example of what can be achieved. Education of consumers is needed. We need water efficiency to be a key part of buildings regulations.

Anna Bradnam: Are there other organisations pumping from the cam catchment? Do you work with them? Are there agreements?

Daniel Clark: CWC are the largest organisation working in the catchment. But there are others – Affinity, Anglian. Also agriculture, business and private individuals.

The Cam Ely Ouse area is a priority for DEFRA – the organisations in this area are working together on the whole catchment. But this is a relatively new approach.

Anna Bradnam: What are the financial arrangements for supplying water to the retailers?

Daniel Clark: Not an expert on retailers. Government have some role in this. It is similar to gas and electricity retailers.

Session 5: Environment Agency Team Brampton

Presenting:

Ali Taylor, Rob Bakewell, Andy Chapman.

Working on responses to the drought / challenges. Working with other groups in the locality. Pleased that the discussion is happening.



River Granta

Andy Chapman:

The EA have worked locally with various organisations.

EA have recognised the pressure - not issued any new abstraction licenses since the droughts in the 90s – but this doesn't resolve the situation we are facing. Current levels of increased water use are causing problems when we don't see sufficient rainfall over winter.

East Anglia West – rainfall surface deficit. Last drought in 2011. 2012 was the wettest year on record – but declines since then, now back in drought. Crucial recent lower than average winter rainfall has perhaps triggered this event.

Felt hardest in the Cam – even when rain has come across a wider area, the Cam catchment has not had enough.

Cam Catchment – rainfall deficit over winter months, after a hot 2018 summer that increased

demand. Dernford (in Sawston) and Stapleford areas are examples of how low water flows are. There are support boreholes throughout the catchment, e.g. Stapleford, Linton.

Augmentation schemes are not enough to sustain the flow – we are pumping into a dry riverbed so the water flows away.

Future forecast for groundwater depends on winter (& spring) rainfall - we are now a long way below the average river flow for this time of year. September / October has seen 140/150% of long-term average catchment – some small groundwater recharge, fortunately.

Rob Bakewell:

Dry weather is an issue.

Growth, expansion, water consumption is an issue – on average we consume 140 L of water per person per day.

The value of water is an issue.

Leakage is an issue.

Chalk streams do not have a separate environmental classification – they should!

Abstraction is the underlying cause – but we do need drinking water. Can't just 'turn off their taps'. Basin management plans are in order – we are working with water companies – consultation launches next week for a new water plan. We encourage everyone to be involved - the public's involvement is important. [see <https://www.anglianwater.co.uk/about-us/our-strategies-and-plans/>]

The Water Industry National Environment Programme – looks at what is necessary but also what is affordable. This links to how we value water.

Other abstraction customers (e.g. agriculture) do have time limited licenses which are reviewed to make sure that they are using water sensibly.

Session 5 Questions

Graham Cone: South Cambridge being told to use meters, but central Cambridge are not? Should everyone use them?

Ali Taylor: Customers should use water meters, to reduce usage. We have data that shows using meters causes water consumption reduction.

Graham Cone: Should we have a target for usage?

Rob Bakewell: Local Plan, EA is a consultee. Cannot object on water issues, but can advise. Has made attempts to constrain

Anna Bradnam: Limitations set on the EA. But why has a drought not been publicly acknowledged?

Rob Bakewell: We know we have been in drought. We have been in prolonged dry weather. Is it our role to tell everyone about this? Yes. Have we done it? No. We should have shouted earlier. Been in prolonged dry weather since August 2018, in drought since May 2019. Lack of communication / confusion between EA and water companies.

Anna Bradnam: Not convinced by water meter effects. So what plans are you taking to reduce consumption? What power do you need (nationally) to stop abstraction?

Rob Bakewell: It's not EA's role to tell you how much water to use. We cannot bring water in from other places – we don't manage the infrastructure. There is no specific body / role to deal with this – but Water Resources East can look at this. Strategic engagement is needed from all of those involved, but pipelines are costly both economically and environmentally. Reservoirs have been discussed.

Anna Bradnam: Where do we need to take action to ensure EA's action is reducing abstraction?

Rob Bakewell: There are different types of licenses in place. We cannot amend permit licenses.

Anna Bradnam: Do you need power from national government to reduce agricultural abstraction?

Rob Bakewell: No. We can control abstraction levels for agricultural uses. We have staff to monitor this. Usefully, farmers self-report their neighbours for over-abstraction. Licenses for 12 year periods - if there are major concerns with an areas water supply, licenses can be reviewed sooner (e.g. to 4/6 years).

Andy Chapman: Abstraction for agriculture is controlled carefully. We need to change the societal values for water.

Rod Cantrill: EA are seen as the custodians of the water courses. What confidence can we have in the EA that this is a top priority issue? What needs to be done for the chalk aquifer to be replenished? Is it past the point of no return? Should there be major legislation on water companies?

Andy Chapman: The aquifer will replenish under a wet winter. Ecology does come back when this happens, but it does take a long time for full recovery. Problems of cost-benefit analysis. River support schemes can be put in place cheaply.

Rob Bakewell: The EA is a great bunch of people doing important work – open question as to whether chalk streams should be separately regulated.

Katie Thornburrow: We could continue this conversation, but need to move on. Plea for EA to look at and update data. Experts rely on this data for making decisions, but website data is only from 2016, this needs to be updated.

Session 6: The Federation of Cambridge Residents' Associations (FeCRA), CB Schools Eco-Council, Hobsons Conduit Trust, CCC Ecologist

FeCRA:

Wendy Blythe

There is not enough supply of water for planned future developments – especially in light of climate change.

Shared concerns by residents of reduced flow – the state of ground water in Cambridge is critical. Various community water sources have dried up in summer 2019 – Paradise Creek / Grantchester Meadows was dredged in 2017, but now clogged with pennywort and duckweed.

Rivers should have rights. Cam is in crisis - media attention and voice of other campaigners. Management should be free from conflicts of interests.

GCP did not consult river groups on plans that would affect them e.g. building bridges
Where does the water come from for future developments? Public want proper engagement in the local plan.



Hobson's Brook

EA – lack capability / funds to restrict abstraction licenses. This point was made in 2015 meeting with Lewis H, and other county council members present.
REFUSAL of developments that need more water than is there – environmental protection needs to be put above any marginal economic gain. Need to consider sewage also.

Meet the needs of the present without compromising the ability of future generations to meet their needs.

Suggestions:

Can we include planned water usage in planning applications? Statements from water companies.

Developments must be subject to habitat checks.

Want to revisit regulatory regime and limit Cambridge Water abstraction.

CB School Eco-Council

Harry

Concern for town/river/trees and the valley

Protect nature for future generations

Cam is currently at 70% below its average flow rate

EA have announced 'exceptionally low' flow of the Cam – the only river in the country to have this status

Local companies need to stop exploiting ground water

We demand: stop taking water from chalk streams for future housing, so that rivers are ok and plants / animals don't die.

Don't destroy our rivers or we will never forgive you.

We do need water but we must get it sustainably.

Ideas: We can use rainwater harvesting, grey water – re-usage of water for housing.

Education - the general public don't know enough about this issue, this message needs to be conveyed.

Samia

Recreational value of this river – it is needed for future generations. The older generations need to take responsibility for this.

Ella

Young people need to enjoy the river, and so do future generations.

Hobson's Conduit Trust –

John Latham

Augmentation schemes are an assistance to the system, but they are not the solution – we cannot continue like this.

The trust is 400 years old and harnesses water from Nine Wells (still provide water throughout Cambridge, e.g. to the Botanic Gardens). There have been broad concerns with the provision of water for Cambridge for a long time. Similarly, Cambridge has been classified as a water stressed region for a long time.

Couldn't run the tunnel on Trumpington street this year.

Grateful to the EA and CWC for the augmentation and its benefits – without it we problem wouldn't have a river. But, if we accept a climate emergency, we must accept that there is a groundwater supply emergency and that the current infrastructure / supply of water cannot be sustained / is not resilient.

Cambridge City Council Biodiversity Officer

Guy Belcher

The river has been highly modified throughout history.

A good example is the Rush on Sheep's Green, a project from 2016. Lots of local work has been done in Newnham on improving the river flow: found kingfisher, spined loach, invertebrates, water vole – species are hanging on. Surveys on local biodiversity – some species remain, some do not.

Reconnected the river with new structures - small scale engineering works. Water flow returned – an eel emerged straight away! Now a self-sustaining ecosystem. Lots of help from volunteers. Despite the general dire state, aquatic ecology can bounce back – two large mature brown trout this year.

We understand the issues, now we need to work together for the future – and retain hope that we can improve things.

Summary & Close

Graham Cone: There is a responsibility, held by everyone, to treat water more valuably.

Anna Bradnam: We have a responsibility to look after the resources for future generations. We are facing a groundwater emergency. We need national government to take this forward, to supply water to this area because CWC / EA may not have the power to do so.

Rod Cantrill: This discussion has been useful for providing visibility on this issue. We do have a water crisis – we need to take action. We must be hopeful, we can look at Newnham (Coe Fen) as a good example.

Katie Thornburrow: Thanks. We are all passionate, need to focus on the ecological evidence. This is the start - we are looking forward to continuing with this and creating a report, and making recommendations for actions.



This report has been written by Katie Thornburrow and Ben Neeley based on the presentations and discussions that took place in the Guildhall, Cambridge on November 5 2019. Any errors and omissions are our responsibility.

Photographs were taken by Katie Thornburrow and Rob Mungovan

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