



**Proceedings of the 2015 Vitacress Conservation Trust's  
Chalk Stream Headwaters Forum  
Sparsholt College - 6<sup>th</sup> November 2015**

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**Guest Speakers:**

**Prof. Gail Taylor**

University of Southampton & VCT Chair

**Graham Roberts**

Ull Chair

**William Daniel**

Famous Fishing

**Neil Crooks**

University of Brighton

**Paul Jose**

Wessex Rivers Trust

**Martin de Retuerto**

H&IOW Wildlife Trust

**Kerry Sims**

Environment Agency

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**Opened by:**

**Lady Alison Wakeham**

VCT Patron

**Facilitated by:**

**Tim Nevard**

VCT Trustee

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**With special thanks to:**

**Carrie Hutchings**

VCT Co-ordinator

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## Session One

### Welcome

Lady Wakeham welcomed the audience to the 9<sup>th</sup> annual Chalk Steam Headwaters Forum, before introducing Tim Nevard (Vitacress Conservation Trustee)

### Introduction

Tim Nevard (VCT Trustee) set out the programme for the day and emphasised that as it was extremely full timekeeping and questions would need to be carefully-managed. He thanked Carrie Hutchings (VCT Co-ordinator) for ensuring that the event runs smoothly year after year, as well as the attendees for their continuing support. He also introduced Leah Mathias-Collins (who was unfortunately unable to attend), who has recently joined Vitacress as manager of sustainability and will pick-up some of Steve Rothwell's responsibilities as he has now stepped back to a non executive role.

## Session One

### Presentation 1 – Prof. Gail Taylor, University of Southampton – Update on the Bourne Rivulet Initiative and VCT funded Phosphorus Research

Professor Taylor explained that Dr Pete Shaw was unable to attend this year and therefore she was covering for him. She re-stated the purpose of the Bourne Rivulet Initiative – *“To meet regularly to discuss issues and management of the Bourne and in particular any issues negatively impacting the rivulet”* and mentioned four key questions that have been raised over the years: phosphate levels above and below water cress beds; invertebrate population monitoring (particularly *Gammarus*); reducing sediment; and the development of a wetland above or below the watercress farm. She also emphasised the ever-present issue of the sewage infrastructure in St Mary Bourne, and the work that Southern Water are currently doing to seal laterals and fix leaks. She then noted that permission had been granted for 30 new houses in the area, which is a concern due to a constant increase in load to the sewage infrastructure.

The 2014 floods were mentioned as a potential factor in high Phosphorus levels, as the area was flooded out, and hydrology was impacted, although the exact source of high P values remained imprecisely-known. Long term issues for invertebrates in the Bourne – particularly the Eastern channel, below the watercress farm were discussed and that improvements had been made. However, in the last year there has been a decline in *Gammarus*, in both Eastern and Western

channels; and work is now taking place to investigate and correct this. Vitacress have invested in recycling gravel to try and improve the environment and support *Gammarus* populations again.

The Sediment Pathways project on the Itchen was discussed and how the sediment ingress could be mitigated. A similar project with the Highways Agency was previously very effective. Lastly, the Wetland Project was discussed and how the environment itself can be managed in order to mitigate the effects of watercress farming. Gail then thanked the audience for listening and welcomed any questions.

### **Presentation 2 – Graham Roberts, Ull Chair – Update on the Upper Itchen Initiative, watercress farm permitting and white-clawed crayfish research**

Graham Roberts stated that the stakeholder group has continued to work very well on the Upper Itchen, and that they frequently have at least 20 people or groups represented. He mentioned the importance of the attendance of these people, including riparian land owners at their meetings. He then thanked Vitacress for facilitating the Ull and the Chalk Stream Forum.

He then introduced the Southern Chalk Stream project, run by Dr Ben Rushbrook (in the audience). The White-clawed crayfish was the focus of this project and was supported by EA, Natural England, Vitacress and, Bristol University. He highlighted the promising new addition at Sparsholt College, Hampshire, of an R & D unit for the captive breeding of white-clawed crayfish. He mentioned the important aims going forward for the reintroduction of this species to appropriate sites; creation of arc sites and current success of programmes such as the captive breeding programme that has so far produced 1000 juveniles over 3 years (at Bristol Zoo).

'Itchen crayfish' have now been successfully reared and a remnant population has recently been found on the Test, despite the invasive signal crayfish being found above and below this population. The EA and Natural are now supporting this project. Graham then explained the importance of maintaining long-term effort, as well as engaging with riparian land owners and agriculture; especially in high priority areas. He explained that there are some independent grants available (Up to £10,000) and encouraged members of the audience to explore these or encourage anybody they know to do so.

He then moved on to nutrients in the Upper Itchen and on-line lakes. He stated that there is progress, working alongside Natural England and the EA. Alresford Pond and Tichborne Lake were highlighted as examples. Lakes on Drove Lane and The Grange in the Candovers were also mentioned – all of these lakes suffer siltation, potentially becoming 'time-bombs' harmful chemicals and nutrients. He emphasised that these lakes need to be dealt with sooner rather than later;

having a finite capacity and saturation could lead to serious problems downstream, especially P release.

Septic tanks were highlighted as a concern on the Upper Itchen, and the Wildlife Trust has undertaken work on the Upper Itchen, working with a PhD student. They have estimated sewage contribution and also investigated household detergents and household usage. Graham then highlighted more specific P loadings on various reaches and the potential leakage from sewers and septic tanks leeching into groundwater. Graham highlighted the Wildlife Trust's survey with homeowners in the area of Alresford to determine who owns dishwashers, suggesting this could be a significant contributor to P. Graham thanked the Salmon & Trout Association for funding such surveys. Graham showed a number of graphs and figures via his presentation.

He also mentioned that he does not believe P is the *only* issue, and that other factors need to be monitored too. Fish farms were something highlighted as a potential contributor to other factors affecting our rivers – particularly due to discharge. He then finalised by stating that the priorities for the group are water quality and quantity, *Gammarus* decline, abstraction, usage and public water supply. He encouraged people to vote wisely in forthcoming elections, as funding cuts have significantly hindered the management of our aquatic environment.

### **Presentation 3 – William Daniel, Famous Fishing – “Where the Bright Waters Meet” – Historical and Cultural Significance of Chalk Streams**

William Daniel introduced himself and outlined the background of Famous Fishing. He emphasised the necessity for clean waters and how fundamental it is for both his hobby (as a fly fisher) and his business. He then spoke about the history of trout fly fishing and how it originated on chalk streams and discussed three famous founders: Halford, George Edward McKenzie Skues and Frank Sawyer - all of whom were famous for a different technique or piece of tackle that they each introduced to the sport.

William reiterated the importance of water quality to all this; water clarity is crucial as trout are visual predators and temperature also key as trout thrive only between 10-17°C. William then went into further detail about the rich history of English chalk streams and the 'celebrity status' they have amongst fishers across the world. He emphasized that there are only 200 chalk streams in the world – 160 of which are in England. Only 17% of these UK meet 'good ecological status' under the WFD, which highlights an urgent concern to manage and restore these globally rare habitats.

William made the point that where something is so famous and sought after that it brings in wealthy people and is therefore of major economic benefit. He then detailed further cultural benefits such as recreation, amenity and health. He spoke about Henry Plunket-Greene's 'Where the Bright

Waters Meet' that has a worldwide reputation, and people visit, and even pay tribute at his grave before fishing. Plunket-Greene described the Bourne as "unquestionably the finest small trout stream in England".

Following this overview of the history and importance of chalk streams, William moved on to talk about a case study on the Bourne. The Bourne is classified as a heavily modified river, due to cascades being installed to support an ornamental lake. There are no Grayling upstream of this cascade and many people would like it to stay that way. There were plans to remove these cascades to reconnect it with the Lower Test; however, this was opposed by many, as it would eliminate 50 yards of important deep refuge water created by the cascades. He then highlighted examples of very rare species of invertebrate that are only found upstream of the cascades, and nowhere else in Hampshire, reiterating their importance and a reason why it should have SSSI status.

William concluded by offering to provide a set of Black Poplars to replace the hybrid poplars in Plunket-Greene's photograph – all now sadly deceased.

### **Session One Q & A**

#### ***Peter Evans - Friend of the Bourne***

*"My family lived on the Bourne for 60 years, but it was William Daniel that introduced me to its ecological situation. If a wetland is required to treat water, whether as a failsafe or mitigation, then it should be designed as such. Unless designed properly it could be similar to the hydrology of Alresford Pond, as an in-line lake. As you can't line it due to groundwater, it floods and has a spring issuing Phosphate at 60ppb, my view is that as there are 'brownfield' sites upstream, where you could actually engineer a wetland, treat the effluent and put it back, therefore restoring some of the hydromorphological balance. However, as funding is not yet available to research the hydrogeology, we don't actually know how this works. We talk about sewage from septic tanks, but if that gets into chalk it just gets locked up, but that's not going to happen in a floodplain, so we really need to understand pollution pathways"*

#### ***Paul Knight – Salmon & Trout Association***

*"William has quite rightly described the fact that the Bourne is not a SSSI, and my point is that this designation won't make any difference in practice, because the Upper Itchen is a special area of conservation under EU legislation, and you cannot get any more protected than that – yet all is far from well. And I come from a political aspect, not just ecological, so unless we get the support at political level to provide the EA and Natural England with the funding and resources they need to protect the rivers, despite us doing our bit, we're not going to get anywhere"*

## Session Two

### Presentation 4 – Dr Neil Crooks, University of Brighton – “Fish and Cress”, Watercress Farming and Chalk Streams (a research outline)

Dr Crooks introduced himself by talking about his history in the industry and his research experience. This led on to his current work with Brighton University where he is lecturing and supervising a PhD student, funded by the VCT. Neil highlighted the current literature on the impact of watercress growing but indicated that there is no literature on the impacts on fish.

The VCT is now funding a three year research programme on early life stages of fish exposed to the outputs, especially PEITC from watercress farming. He emphasized that he comes completely from a scientific point of view, and that watercress is certainly toxic when damaged, as we know due to a natural defence mechanism. He alluded to the possibility that it is the invertebrates getting directly affected, with a potential knock-on effect to fish communities. However, there is no way of knowing without exposure tests. Neil stated that we can do all the testing we want downstream, but until we do specific chemical exposures, we cannot point any fingers.

Neil then went on to talk about SRP (Soluble reactive phosphorus) and its effect on fish. Neil gave a general overview of well-known consequences of Phosphorus such as algal blooms and oxygen crashes that can rapidly damage fish and invertebrate communities. Neil mentioned literature discussing the detrimental effects of fish farms on downstream invertebrate populations and the knock-on effect of that on fish communities. However, literature here too is limited. The only paper Neil has found is from a medical journal studying the immune response in fish to some of the chemicals found in watercress.

Based on this, Neil proposes that his studies will look at trout and Bullheads, as well as *Cyprinids* and *Percids*, and study their response to chemical exposure. Neil then detailed the procedure his study would follow. A basic overview includes examination of egg fertilisation and development stages up until feeding when exposed to watercress farm ‘effluent’. Neil then discussed the key components he will be examining in the experiment in detail. Field studies will play a part; electrofishing and habitat surveys semi-annually upstream and downstream. The research will also look at a range of water quality components, topography and in-situ river monitoring. Neil concluded by stating that the overall aims were to understand direct and indirect impacts of watercress beds.



**Presentation 5 – Prof. Gail Taylor, University of Southampton – “Tight Genes”, Watercress Breeding for Sustainable Intensification (a research outline)**

Professor Taylor started by stating that her research focus is on watercress itself. More specifically, she talked about Vitacress’ watercress breeding programme that aims to ‘get more from less’. She indicated that a watercress breeding programme had been ongoing for the past 5 years. Gail then gave a brief overview of watercress and its classification followed by key health benefits of consuming it. The chemicals in this family of plants have many significant health benefits including reduced risk of cancer. Gail expanded on the chemotherapeutic properties of watercress and mentioned the anti-oxidant properties of watercress. Gail emphasized that her work was not genetic modification but the selection of better crops. She informed the audience of a molecular breeding programme at Southampton University (the only one of its kind in the world) that collects plants worldwide, using DNA sequencing and markers to select better crops, due to variation in the composition of different strains.

Gail then explained that watercress strains could be selected to better utilise phosphorus. They are currently developing a watercress plant that will take up Phosphorus more efficiently.

Gail talked about the anti-oxidant properties of watercress and showed that there is a significant variation in natural strains. After further study a new watercress strain was identified and propagated with a superior chemical composition that will hopefully be launched in supermarkets in 2016.

Gail elaborated on Next Generation Sequencing that enables a molecular level examination of strains of watercress, allowing precision selective breeding. Some 200 of The F2 generations of the new strains of watercress are now being commercially grown. Gail concluded her presentation by emphasising the significance and importance of watercress research at University of Southampton for both health and ecological benefits, before thanking the University of Southampton and Vitacress for funding that has allowed this research to take place.

**Presentation 6 – Paul José, Wessex Rivers Trust – “Gin Clear”, Partnership Working – the Pathway to Success. A Rivers Trust View of Chalk Stream Management**

Paul welcomed everybody by emphasising how pleased he was to be at the Forum. He stated that he would be presenting a Rivers Trust view but emphasised that collaboration with other organisations was essential. He mentioned the areas that the Rivers Trust oversees: science based decisions; catchment management framework; habitat restoration; and education. He explained their vision in improving water quality and hydromorphology for functioning and sustainable ecosystems.

He indicated Paul some water quality elements they are particularly interested in: sediment; P & N; habitat modification; and water quantity. Paul then went on to discuss the science and monitoring they carry out. Examples include catchment invertebrate fingerprinting using invertebrates as a natural indicator; environmental stresses; work with the EA and Aquascience for data collection (heat map on presentation) and analysis; work with the Test and Itchen Catchment Partnership; the Sediment Pathways Project; and further invert sampling. Following on from this he highlighted priority projects; water quality, water quantity, biodiversity and communities. The Trust is tackling these issues by pinpointing where the root of the problems, which requires help from environmental and agricultural sectors.

He then went on to pose the question whether gravel cleaning actually works and showed the results of a study which suggests that it does. He explained the way the Trust is dealing with habitat restoration based on collaboration with various groups in order to create environments based on the actual needs of fish and invertebrates. He supported this by showing a graph that indicated the populations of fish before and after restoration – supporting the effectiveness of their work.

Paul explained the River Trust's educational vision, which includes a programme with Winchester College and Citizen Science (Invasive species and angling monitoring) that aims to plan for the future by educating the public and potential future members of the industry based on scientific evidence. Stakeholder engagement was highlighted as being absolutely essential to delivering successful projects.

### **Presentation 7 – Martin de Retuerto, H&IOW Wildlife Trust – “A Ring of Bright Water”, A Nature Conservation Perspective on Chalk Stream Management**

Martin de Retuerto greeted the audience and commended Paul's talk for providing him with a platform to build on. He gave a background on what the Wildlife Trust is doing, particularly in relation to Hampshire's chalk stream headwaters. Martin stated that the Wildlife Trust had been around since 1961, with the core of what they do being nature reserve management. More recently that has evolved into a more specific strategy of “living landscapes and living seas”.

The Wildlife Trust manages about 2% of Hampshire, which has enabled them to gain a broad perspective on managing a variety of sites. It has over 30 years' experience on chalk streams, headwaters, introductions, species production and eradication of invasive species. He stated that most of their work is completed in partnership with others, and particularly riparian owners. Martin highlighted the Rivers Trust, Natural England and the EA as very important organisations in their work.

Martin indicated that a lot of work they now do is focussed on 'future-proofing' the environment and gave examples of the Itchen, where former management practices had failed, despite good motives, and how the Wildlife Trust had rectified this with very simple and effective restoration strategies. He gave other examples, including an example where a very prolific salmon run had become almost non-existent due to over abstraction – and how the Wildlife Trust had completed work to restore this to its former state. He showed before and after photos and figures to back-up the effectiveness of their work.

He stated that 77% of our chalk streams are still considered poor condition and that water quality is one of the key limiting factors. Martin went on to make the point that there are concerns over the application and enforcement of Water Framework Directive regulations. He indicated that roughly 60% of N is diffuse sources from agriculture and P 30%. Following on from this point, he highlighted that 130,000 new homes are to be built in Hampshire, which can only make this issue of diffuse source pollution worse.

Martin moved on to discuss 'Making Nature Relevant; and the UK Natural Ecosystem Assessment. This led him on to giving a figure that flooding damage could cost up to £176 billion by the 2080s, which should surely make nature relevant from a political and economic point of view. Also he stated that areas of highly man-made structures were most affected by the 2014 floods, reiterating the necessity for this work to be supported by the Government. Martin indicated that natural defences can be sustained the extreme weather better than many heavily-engineered structures, supporting restoration of the natural ecology of waterways and floodplains. On a Wildlife Trust property, silt from natural floods produced the best hay crops on record! Martin gave some more local examples of the Trust's work in restoring flood plains and emphasised the benefits to biodiversity – 84% of crops rely on insect pollination, valued at £651 million.

## **Session Two Q & A**

### **Paul Knight – Salmon and Trout Association**

*"I wondered whether with a bit more funding one could elucidate on the idea that Phosphate might be destroying the 'stickability' of invert eggs on weed. We are doing an invertebrate study throughout the UK, looking at 12 rivers, and really this Gammarus malaise is going right across them, not just on chalk streams. I wondered, as you're doing it with trout eggs, might it be that for a small injection of funds this would be viable?"*

**Dr Neil Crooks**

*“Yes if somebody can come up with the funds, we have the lab space and facilities to do it if somebody can supply us with the eggs”*

(NB - Paul made an arrangement to speak with Neil about this idea later and further details were not discussed in the conference itself)

**Peter Evans - Friend of the Bourne**

*“I noticed that Dr Crooks referred to Cox’s 2009 report. That was really the start of things. In that I think we said that water SRP is small in relation to TRP. Now it’s obvious that new science will certainly give us a bigger picture. But in the broader picture of the whole hydrology, I think we don’t really understand the subsurface pathways of the sewage treatment works and everything else. Natural England have done a lot of work on septic tanks and are now finding that discharge treatment under permits is nothing like as good as septic tanks in taking out phosphates. I think the question is actually that we know there are a lot of septic tanks, but how many are actually contributing?”*

**Hugh Oliver Bellasis – Trustee of the Game and Wildlife Conservation Trust**

*“Can I pick up a comment made by Martin de Retuerto? He showed a picture of some maize and stated that 30% of Phosphate is coming from farming, and I may therefore appear as an apologist for farming. A piece of work at Loddington, working on diffuse pollution in the Eye Brook area shows that 90% is coming from septic tanks and the remaining 10% can’t actually be directly attributed to farming. I think we need to be careful and I would suggest that the septic tank issue is a much greater issue than we have all admitted. The EA was actually going to data log all septic tanks, and didn’t do so due to lack of funding. Many cases show that septic tanks are a massive issue. Now, a number of speakers have said we should work collaboratively, so let’s put our money where our mouths are and do so and share data”.*

**Martin de Retuerto**

*“Thank you for those comments, especially your last point. Admittedly some of those figures provided are average figures, some are national figures. In the case of farming contribution - that figure was taken from the recent WWF report, which looks across chalk rivers as a whole. I absolutely accept the point on septic tanks and I think locally we will see a significant shift in the ratio. I take your point on board”*

**Hugh Oliver Bellasis**

*“Thank you, but I believe that this casts into question the data provided by the WWF, which reiterates the fact that we need to work together*

**Graham Roberts**

*“The Wildlife Trust’s study was very but did indicate that there was a problem, but we haven’t done sufficient follow up studies. If we can find more resources, particularly in sharing data, and based on this I think we will make sure that we can do as much as we can and work in conjunction with people to deliver a wider representation”*

**Paul José**

*“It’s very interesting when looking at the nutrient side of things. It depends on the catchment and one of the reasons why we are focussing on the Test and Itchen catchments is because were aware of the issue. So we’ve actually got that forum for data sharing with other organisations going on. If one looks across onto the Avon, there are certain aspects that are very different from what we have here, so I think catchment specific solutions are essential. But wouldn’t it be great to have P and N budgets for all the catchments? I agree with you, let’s get the information together and share it, and perhaps the Catchment Partnership will be a forum to bring some of that together”*

**Moya Grove – CPRE Hampshire**

*“Nearly all of this morning’s discussion has been on water quality, but we are very worried about water quantity, with plans for potential over abstraction, all to fulfil the needs of new housing development. What are the speakers doing to restrict the power of the Government to force through these housing proposals?”*

**Professor Gail Taylor**

*“Well I think this goes back to the planners and how the plans are in place being enforced. It comes back to the point that Martin was making about the National Ecosystem Assessment, We don’t value the ecosystem in the right way for a lot of decisions and unless we have a greater voice to do that, then this is not going to get properly weighed in the balance.”*

**Martin de Retuerto**

*“If I can just say what the Wildlife Trust is doing. At a National level we are lobbying hard where we can and challenging with evidence where we can. Now, at a local level we are seeing a reflection of what the economic and political drivers are requiring, which is more housing. The resource to sustain current and future development is finite, so at a local level we are heavily engaged with the utility*

*companies and statutory bodies, to try and ensure the most stringent outcomes and measures are in place so that the impact on the environment is mitigated and also enhanced. In addition, the resilience to future change is also being considered. So, we are doing what we can with the resources that we have, but this is a challenging financial time for us, and would urge anyone to support charities, to empower us to widen our reach."*

#### **Sean Lennard – Wild Trout Trust**

*"This is a personal comment, rather than from the Trust's. There is a live DEFRA consultation out at the moment about a new set of rules to control agriculture diffuse pollution – they cite that 25% of P is from agriculture and 75% of sediment is from agriculture. My plea is that I would ask people in this room to contribute to that consultation, because what DEFRA are intending is a set of rules which are advice led, and if you read the documentation, there is very little enforcement."*

#### **Dave Rumble – Hampshire Wildlife Trust**

*"I would like to see much more diligence on identifying the financial mechanisms needed to protecting the wider environment from future shocks resulting from poorly-planned development; especially the water-related impact of new homes in Hampshire. We need financially realistic and secure pay-back/environmental bond mechanisms to protect and restore catchments; which is why we need someone here from politics."*

### **Session Three**

#### **Presentation 8 – Kerry Sims, Environment Agency – Improving Chalk Stream Headwaters in Hampshire: Future Aspirations**

Kerry Sims introduced herself by stating that she works in the Solent Fisheries, Biodiversity and Morphology team in Romsey which covers Hampshire and the Isle of Wight. She went on to explain the River Itchen regulatory work. This covered the Habitats Directive on the Itchen SAC, watercress and fish farm discharge permits (modified in April 2014), data on average Phosphate concentrations, Review of Consents and examples of where this has been enforced (9 licenses so far need modifying), and public water supply on fish farms.

Kerry then moved on to talk about the fish & watercress farm project. She said that *Gammarus* levels have declined and an in-situ study showed that salad washing was probably the culprit on the Upper Itchen. She discussed the River Restoration Strategy, which so far this has improved over 3km of river; with 5 structures having been removed or altered, and 150 metres of sheet piling removed.

Kerry indicated that Heb Lehman is managing the project is happy to speak to people about it. She presented data that showed the efficacy of EA's work in improving rivers.

Kerry then talked about on-line lakes and stated that they are a ticking time bomb on the Upper Itchen and that we must explore options with land owners. He set out the example of the Candover restoration, involving narrowing and woody debris addition and temporary fencing. Prior to the project sampling identified 5-7 trout and afterwards 43.

She then moved on to talk about the 'Keep Rivers Cool' project that aims to mitigate climate change through carefully positioned bankside shade planting; to provide fish such as salmonids protection from increasing temperatures.

The final issue raised by Kerry was diffuse pollution. She highlighted septic tanks and small sewage works and stated that the EA has recently reviewed and changed their advice to septic tank owners, due to their research. Kerry concluded with future aspirations that include encouraging catchment sensitive farming and reducing diffuse pollution.

## **Panel Discussion**

Tim Nevard introduced the Panel session by bringing Kerry Sims, Steve Rothwell, Graham Roberts, William Daniel, Martin de Retuerto and Tim Sykes to the panel.

### **Peter Evans**

*"On the Lambourn consent issue, why are SACs and SSSIs, not automatically sites of high public interest?"*

### **Tim Sykes - Environment Agency**

*"Basically they have a classification on what makes a site, a 'site of high public interest'"*

### **Tim Nevard**

*"So why aren't they?"*

### **Tim Sykes:**

*"I don't know to be honest. I should say this is not my area. We are obliged to consult the public if we want to. Why we would choose not to, I don't know, certainly around here"*

### **William Daniel**

*"I actually contacted the consenting officer, three times, without anything other than a standard reply. The understanding was that a permit would be issued and concerns would be addressed afterwards"*

### **Paul Knight**

*"As I understand it, the permit was given from above local level, yet it's the local EA staff, who delegate it. You work with the locals and they say absolutely, and yet national EA permitting say no it's fine. So why have a local team if the National team take no notice of them?"*

**Tim Sykes**

*“Yes, to be honest Paul, I guess it’s one of those issues where we split the organisation to have a permitting sector to deal with that. They only have to consult local staff if it is deemed to be a local issue.”*

**Tim Nevard**

*“The fact is that an area of supposed highest conservation status, such as an SAC’ is not automatically a ‘site of high public importance’ seems very odd.”*

**Shirley Medgett – Environment Agency**

*“There seems to be some disconnect between local officers and the people who wield the stamp to put on official documents”*

**Martin de Retuerto**

*“The Blueprint for Water” is a coalition of a number of national organisations. The recent Water Matters paper is a manifesto and covers a lot of the key issues we have been addressing today and would be a direct link to this one.*

**Paul Knight**

*There should be a presumption against any licence on a SAC river that that has any chance of impacting. It is a failed process. It is not the first time we have come up against strange things from EA’s national permitting but this has set a strange precedent.*

**Graham Roberts**

*“Unless there is some form of legal challenge we will not get anywhere. DEFRA have proposed 20-40% cuts to the EA next year which will be catastrophic”.*

*(NB - It was then suggested that an open letter should be written to explain this issue in order to try and get some classification and even rectification).*

**Paul Knight**

*Legally the UK Government has a statutory obligation under the Habitats Directive which they are not meeting.*

**Tim Sykes**

*It is a specific case so write to the Area manager.*

**Paul Knight**

*The Area Manager has said they have now rectified the permit so no longer an issue.*

**Mike Blackmore**

*“Why, when P is a major pollutant from waste water have we not followed EU and banned P in our household products?”*



**Graham Roberts**

*To take on a big company will cost money. At the current time it is still not seen as a priority. Until we get an evidence base to prove what they are doing we cannot move forward, as companies such as Ecover are doing well.*

**Kerry Sims**

*“Legislation will eventually require that phosphates are removed from detergents; it has already happened with laundry detergents and dishwasher detergents will follow. Some products will be restricted in the chemicals they contain, such as P, by 2017”*

**Professor Gail Taylor**

*“I have a question related to this, which has time and time again come up as an important issue at the Forum. Domestic septic tanks are an important issue on the Itchen and the Test. And I have been hearing of some ambitious plans, of applying permits to septic tank users on the Test and Itchen, which would go some way in reducing the impact of household usage. But the EA are subject to 40% cuts going forward, so can the EA really deliver on that?”*

**Kerry Sims**

*“I was going to add, that we are actually part of a trial area with the first of the permitting happening, starting in January 2016. It won't be every instance within those areas being monitored, but will be the priorities within those areas being monitored. This won't be a wide scale permitting of every septic tank but a prioritised and managed approach”*

**Tim Sykes**

*“The government has flipped and flopped several times on this issue. I think it's down to political will as well as resources”*

**Professor Gail Taylor**

*“Yes, and I don't think we're making much progress really on that. We heard from Linda May just how important this is.”*

**William Daniel**

*“On the specific example of Vitacress's discharge – Vitacress don't break any rules with their discharge because they always operate within the discharge consent. Looking at Kerry's pyramid, the Bourne Rivulet comes rather a long way down the list, even though it is actually connected to a SSSI. So, Vitacress need to voluntarily improve their discharge, so it doesn't damage the river.*

**Tim Nevard**

*“So, what do they need to do?”*

**William Daniel**

*“The suspended solids consent is way too high.”*

**Dr Steve Rothwell – Vitacress Salads**

*“We acknowledged the problem of depleted Gammarus populations below the farm, investigated the causal factor and fixed it. For three years everything was great, and then there was a decline. We spent a lot of money trying to fix the eastern channel, spending £350,000 alone putting a recirculation system in to remove PEITC. It has only been in the last two weeks that we identified the*

system had a leak, which we assume is why we weren't seeing the necessary improvements in Gammarus populations."

**William Daniel**

"How do you account for the preponderance of the low oxygen species in the eastern channel then? There is more to it than just PEITC."

**Dr Steve Rothwell**

"Well, the effects of PEITC are very similar to the effects of organic pollutants,. The ones that seem to survive in low oxygen environments seem unaffected by PEITC and are the ones that then predominate but it is a secondary, rather than primary effect"

**Tim Sykes**

"Kerry alluded to the standards for monitoring targets – the CSMG targets in the current RBMP's. These are much more stringent than anything we've had before – even more so than those permits we granted in April 2014. In effect that moves the goalposts, and that is going to be very challenging for all businesses to meet those targets. Is it enough? I don't know, but it'll be a damn sight tighter than it is now."

**Oliver Hugh Bellasis**

"If I hadn't attended today, I would not be aware, as a householder, of the document sent out by the EA about septic tanks. So I would suggest that we can help you, by you making sure we know. It is well known, if not well documented, where septic tanks are. These documents need to go public."

**Rupert Kelton - Wessex Chalk Stream Rivers Trust**

"One of the projects we're working on now is alongside the EA with an awareness campaign for septic tanks."

**Tim Nevard**

"Does anyone here buy phosphate free detergent? William, you have but you don't anymore."

(NB - A show of hands was taken in order to see who used Phosphate free detergents, and about 1/3 attending did use them)

**Diana Davidson - Loddon**

"Water softeners don't seem to be in any studies, because many are using salt. This is something we need to look at."

**Dr Steve Rothwell**

"Septic tanks are a problem because human waste accounts for 60% of P load; so we will never eliminate them as a major source of pollution into groundwater or streams - and the biggest septic tank in Hampshire lies beneath Alresford. That untreated sewage effluent has all been discharged to the chalk for decades which surely isn't sustainable, and one day something will happen in terms of that high phosphate load manifesting in the spring water?"

**Bill Scott - Environment Agency**

"This is not quite correct, as Alresford does have a secondary sewage treatment plant."

**Ali Morse - Hampshire Wildlife Trust**

*“Through awareness work, we will not only be targeting areas with a high prevalence of septic tanks, but we will also be working on sewage works that don’t have tertiary stripping, which are the ones that don’t remove phosphate.”*

**Graham Roberts**

*“Could we at least start by making sure that every sewage works is going to be addressed and put the pressure on Southern Water to make sure they use tertiary treatments”*

**Shirley Medgett**

*“We need to gather evidence for submission into the AMP programme. At the moment EA routine tests of monthly or quarterly samples are being used to identify where spending needs to be targeted. Apart from two graphs we saw on chalk stream phosphate, levels are falling substantially in the rivers so we need to put this in a degree of context. Unless we are aware of other evidence, phosphate levels are better than we have seen for a long time. Pete Shaw’s PhD is finding hot spots around Alresford”.*

**Paul Knight**

*“I’m just coming back on what Shirley said –I just don’t buy it I’m afraid. I think spot sampling once a month just isn’t enough. It might be showing one trend, but not the greater picture. We now know that phosphate does do damage through spikes. We will have our 5 samples back by January, and we will share with you our data, which is showing completely different results to yours.”*

**Tim Nevard**

*“This is going back to Shirley’s point, do you disagree with the EA’s interpretation of where we are with declining phosphate?”*

**Graham Roberts**

*“I do disagree, yes. The evidence is here to show that it’s getting far worse, rather than better. It is difficult to pinpoint it and we know it’s complex but we have to start somewhere radically to do something. If it is the watercress and aquaculture industries that take the big hit, then so be it. Then let’s look at diffuse pollution from septic tanks. If won’t achieve anything if we try to do too much. There needs to be a switch of conscience change; some industries are engaging in the process. We need the next level of engagement where people take personal responsibility”*

**Paul Knight**

*“We’re really perplexed because the new standards were implemented in May 2014, and Vitacress were given until, as I understand, January 2016 to comply; whilst the Watercress Company were, for some inexplicable reason, given another growing season until September 2016. Then we have this issue that we realised monthly samples are being used as an annualised average . So it is not until October 2017 that we will get any action. How robust will that regulation be in 2018, if there is evidence of non compliance? And why do we have to wait until 2018 for regulation to kick in, if it’s so badly required?”*

**Tim Sykes**

*“We need to wait a year, because, like it or not, the permit compliance is the annualised average, so we need a year to get the average. As for the staggered dates – we asked the companies themselves to come up with dates where we could implement the licences as quickly as possible”*

**Dr Steve Rothwell**

*“Well, the parameters on licensing are so low that there is no potential to use Phosphorus as a fertiliser on a watercress farm without breaching these consent parameters. So the only way we could see us complying with these standards is by taking the watercress farm offline and recirculating it. The Watercress Company are going to change their fertiliser regimes to try to comply with the regulations, but with my 30 years’ experience, I don’t really see how that will work. Also, the concentration of a sample at any given time is absolutely meaningless unless you attach a volume and duration to it. Load based consenting was the only realistic way forward and a lost opportunity by the EA*

**Tim Sykes**

*“We are where we are – we’re not going to unpick the work so far, that’s how we regulate. We accept that there is a discrepancy in the dates, but we gave the companies the opportunity to pick their compliance dates. It is not up to us how they meet our regulations, we simply ensure they do comply when the new regulations come into action.”*

**Peter Evans**

*“What I did find when they were drawing up the new consents was that coincidentally they withdrew the consent for monitoring the outflow from the cress beds. Shouldn’t that be included? How can you assess the actual impacts when collecting these samples, if you don’t know what the actual volumes are, as Steve said?”*

**Bill Scott**

*“We used to have a condition under which to monitor for flow rate. That isn’t in standard permits now, they have changed. From what I recall, the permits were set to worst case scenarios”*

(NB - The EA undertook to come back on this point)

**Graham Roberts**

*“I just wanted to change tack slightly and pose a question to Gail. Is the development of new watercress strains in a way a form of genetic modification? Is that not another elephant in the room? Are we potentially introducing another species that could cause environmental issues? Also, in the development process, why are we wasting all of this Phosphorus resource? Can we not be manipulating plant species to benefit more from it?”*

**Professor Gail Taylor**

*“We are not making genetically modified watercress, but what we have to realise in Europe is that we are the odd ones out – 80-90% of food supply globally is being supplied by GM crops. So we have to appreciate that Europe is a slightly different place to be operating. 15 years of science shows no evidence of detrimental effects of GM. We’re not really allowed to have a sensible debate on GM in Europe. We are selecting favourable aspects of the genetic makeup of crops to do traditional breeding more speedily than in the past. Most of our crops are grown in the environment. We now have genome editing, which has been used in fixing Leukaemia – which is the way forward for crops. Going back to Graham’s second point about P in the environment and mopping it up, there is a lot of research on this because Phosphate is a finite resource.*

**Stuart McTeare - Piscatorial society**

*"We manage 17 miles of river across Wiltshire and Hampshire. I'm wondering if there is any truth in the word on the street that Vitacress are using their Amesbury plant for washing produce, which is related to discharge and abstraction?"*

**Dr Steve Rothwell**

*"We do some washing there, with water that we pay for and it goes down the mains sewage that we pay for."*

**William Daniel**

*"Could you wash more salad there?"*

**Dr Steve Rothwell**

*"It would be hugely expensive, at St Mary Bourne we intercept 2.5million litres per day of pure ground water, rinse our salad, filter the water and put it back into the cress beds. This means we have got a clean chemical free salad, a nil water footprint and we use the watercress beds to kill PIETC via percolation through the beds."*

**Peter Evans**

*"Originally, I put the question to the EA that 2.5 million, is a portion of the 32 million l/day you abstract from the ground into cress beds. When I asked about different charging rates, the Water Resources EA said it's been approved for watercress growing so that's the rate it will pay, which is about a 1/200<sup>th</sup> of what one pays for public water. It may be expensive washing at Amesbury, but is that perhaps because you're using a very subsidised water supply?"*

**Dr Steve Rothwell**

*"Yes, but all we are doing is borrowing the water."*

**Keith Broomfield – Environment Agency**

*"It is actually the highest tariff we can apply to our water resources abstraction licence."*

**Henry du Val de Beaulieu – VCT Trustee and Apsley Farms**

*"What is the state of our aquifer at this time? And what is the overall quality of water in the area that you manage?"*

**Tim Sykes**

*"In places, I believe it is meeting its WFD target and in some it is not. Localised issues such as Alresford are not. Some of our aquifers are over committed and there are risks in terms of headwaters such as the Upper Itchen which particularly concerns me at the moment."*

**Martin de Retuerto**

*"It's a question of overall sustainability. There are a number of factors across the board that get missed out. About 15 years ago, the EA produced "Chalk Stream Malaise" – probably one of the most unhelpful chalk stream reports to date, because it's enabled everyone to point fingers elsewhere. We need to systematically knock things off one by one and some things we could collectively by doing our bit."*

**Antony McKeown - River Owner and member of the Portsmouth Services Fly Fishing Association**

*"I have a comment and a question for Tim Sykes. Firstly, thanks to Kerry for mentioning the Meon, which currently seems to be unprotected and we all know it's easier and cheaper to prevent, rather than clear up the mess afterwards. I believe the drastic changes on the Meon are largely due to over abstraction. I toss that at the Environment Agency. Why are we allowing this precious jewel of a river to become a shadow of its former self?"*

**Tim Sykes**

*"We have halved the abstraction licenses this summer of 4 out of 5 non water company contractors – mostly spray irrigators. We met the director of Portsmouth Water this week to discuss their licences. They declined to admit their abstraction had an effect on the Meon."*

**Antony McKeown**

*"Several years ago I wrote to Alison Renning from your dept. and I received back a learned letter telling me that all was well and the aquifers were full – but the evidence suggests she is wrong"*

**Tim Sykes**

*"Well Alison has a different view now."*

**William Daniel**

*"It would be really helpful if we could have a Government Minister attend this Forum next year".*

**Anthony Gay - Franklins Fish Farm**

*"On the augmentation scheme. The EA recently published that by 2040 there was going to be a 15% net reduction in river flows. We've seen with climate change that we have more water in winter and less in summer. Why decommission the augmentation scheme?"*

**Tim Sykes**

*"Running an augmentation scheme is a short term gain. In a period of really low flows, you'd be augmenting it to have water in it in an unnatural time."*

**Peter Evans**

*"I was intrigued about your research on the use of chlorine in streams, and the impact on the Itchen. We saw this in 2006 on the Bourne when Vitacress stopped using chlorine and there was a huge improvement. I'm surprised it's taken you 10 years to hone in on this. I'm very pleased to hear that you are now taking this seriously. Thank you very much."*

**Rob Holland - University of Southampton**

*"It was just a question for everyone, about data. I wonder which organisation is coordinating and pulling all this data together, or whether we need to figure out who is going to do that?"*

**Gail Taylor**

*"That's an excellent question. We know from other examples that it does provide powerful answers, so we must do it and if this group is doing anything, it should be that. It's about having a relational database where you can compare things in different ways"*

**Zam Baring - Wessex Chalk Stream and Rivers Trust**

*“There is an initiative going on in the Rivers Trust, to do just that.”*

**Graham Roberts**

*“CEH collected a lot of data on chalk streams which must be archived somewhere, but needs updating”.*

**Tom Davis**

*“I think we’re all very aware of the Government cuts the EA has and will endure. We’ve talked about their enforcement difficulties and their under resourced initiatives. I’m extremely worried that around the corner, we have an EU referendum, and if we were to leave the EU, the major impetus of our ability to get things done through our Government will be removed from us. If and what should we be doing to lobby and to present to the general public and politicians, this issue and its potentially devastating effects on the environment?”*

**Tim Sykes**

*“Well since Christmas, I have lost 2 and a half out of 12 team members. The spending review will probably be about 40% cuts. We will probably become semi-merged with Natural England. Who knows what it will mean. It will have a demonstrable effect. We will still be here and will still want to do the things you want us to do. Maybe a subject for next year is how we going to do things differently to achieve the things we all want?”*

**Tim Nevard**

*“To conclude the day, I’d like to ask the Panel members to each give us a key observation or wish for the year ahead...”*

**Dr Steve Rothwell**

*“I think the EA are too slow at enforcing and prosecuting, they need to change”.*

**Graham Roberts**

*“I want people to feel more empowered to lobby MPs. We need to fill the room with decision makers and let them hear how unhappy we are”.*

**Kerry Sims**

*“We do need radical changes. We need to find new approaches to tackle these really big things”.*

**William Daniel**

*“What has Europe actually had to add in terms of helping environmental issues?”*

**Martin de Retuerto**

*“We’ve seen stakeholder pressure, often led by the Key NGO’s, has shown that it can help make change for the better. But, equally, we’ve been at the sharp end of cuts. The funding to help NGOs deliver effective programmes has not been forthcoming so they have had to radically reshape and diversify their income methods. My biggest concern is where we are seeing NGOs restricted by political drivers.”*

**Professor Gail Taylor**

*“The government had a policy to sell of our national forests, and people power prevented it. Isn’t it about trying to capture the public’s imagination? Then we can raise any issue”*

**Tim Nevard**

*"I was much taken by Professor Taylor's point about people power. NGOs and agencies concerned with chalk streams need our help, so we need to lobby our MPs and politicians and, as William Daniel suggests bring a 'pollie' to the next Forum! On our 10<sup>th</sup> anniversary next year, at risk of bowdlerising Churchill, perhaps we should indulge in some war war as well as jaw jaw... **Thank you for coming to the 9<sup>th</sup> Chalk Stream Headwaters Forum and we hope to see you again next year.**"*