





## 'How Low can you go? Impacts of drought on Chalk Stream macrophytes'

Alex Poynter – University of Birmingham

The key issue being investigated is the impact of drought on chalk stream macrophytes. This year's abnormal flow regime (Spring drought/Summer flood) has had a confounding impact on chalk stream macrophytes. Early in the season marginal vegetation grew in from the edges, 'pinching' channel flow and creating ecological conditions that seem potentially anomalous when related to the past six years' of survey data. Vegetation structure in the upper, mid and lower reaches of chalk streams and after severe flushing differs; for example, in upper reaches submerged vegetation is less abundant than in mid and lower reaches and filamentous algae is less abundant after flushing events. These and other factors are being tested at the Fobdown site using artificial channels. One of the confounding issues in can be the impact of swans. Although they can cause severe damage to Ranunculus, different flow regimes (eg deeper, faster flows) can mediate their impact and further work planned is planned on the flow/swan grazing relationship.

Q. Alison Graham-Smith *Natural England*  
Do you think that river restoration to speed flows could help?  
A. Yes it would encourage plant growth.

Q. Allan Frake *Retired from EA Wessex*  
Is there a relationship between phosphate and nitrogen?  
A. We're not sure about this.

Q. Moya Grove *CPRE Hampshire*  
Are you going to relate plant growth to flows to upper and middle regions?  
A. These are not strictly comparable due to different channel morphology.

Q. Tom Davies *The Test & Itchen Association Ltd*  
What were the observations in relation to cutting regimes?  
A. These are difficult to quantify. Frequency and severity has impact on plants. 3 or 4 cuts per year can have serious effect. If some patches were cut more severely than others, then this would have an effect.

## Bourne Rivulet Initiative (Progress Report)

Professor Gail Taylor – VCT Chair and University of Southampton

The BRI has brought together a lot of different parties e.g. Parish Councils, Water Companies. The Bright Waters society has joined this year. Gail Taylor talked through the aims and current activities of the group and recent issues which had arisen in the Bourne Valley, such as the Vitacress accidental diesel spill and the scoping study for a Wetland development. An important related issue recently has been sewage over-pumping, winter inundation and summer leakage at St Mary Bourne. An extraordinary Bourne Rivulet Initiative meeting had been held on the 15<sup>th</sup> November 2012. Five points were agreed at the meeting:-

- (i) The Environment Agency should provide the regulatory framework for future action
- (ii) Pressure should be maintained on Southern Water through the BRI



- (iii) There is a need for better hydrogeological insight
- (iv) The members of the BRI need to act together in discussions with Southern Water
- (v) The Wetland could be a bridging solution. WWT have done a pre-feasibility study.

## The Upper Itchen Initiative (Progress Report)

**Graham Roberts – Hampshire & Isle of Wight Wildlife Trust**

Graham indicated that the UII had gained significant traction over the past 12 months but the impact of filamentous algae was expanding its influence on the Itchen, with water quality and quantity continuing to lead the agenda. The UII managed to get some independently funded *Gammarus* surveys undertaken and is currently looking at how to restore Alresford Pond, with an independent consultant. It is clear that long-term sustainable solutions are required in relation to abstraction and compulsory metering by 2015 may see the start of reversals in abstraction rates. The Diffuse Water Pollution Plan is out for consultation and will go out to a wider audience soon. The Itchen Valley Grazing project is also underway (with H&IOWWT coordinating), aimed at bringing-back sustainable grazing regimes to water meadows and grasslands in the valley. The River Restoration Strategy bid failed in the first round, but been asked to re-submit. Ben Rayner of the H&IOWWT has identified that there is now only one population of white-clawed crayfish in the Itchen catchment and that 'ark' sites are being actively sought to provide secure translocation opportunities.

Q. William Daniel *Famous Fishing*

Is *Gammarus* on the Itchen suffering from chlorinated salad wash? If so, why has our knowledge from the BRI taken so long to be applied to the Itchen?

A. There has been resistance, but there is now better investment in the washing process at the plant involved.

## 'Phosphorus in the headwaters of the Test and Itchen: levels, forms & still waters'

**Dr Pete Shaw, Arthur Leung & Marta Gorska – Centre for Environmental Science, University of Southampton**

The research is concentrating on both reactive and non-reactive phosphorus in the Test and Itchen. Soluble, colloidal and particulate fractions are being investigated as each plays a significant role in the phosphorus cycle. Early findings of soluble reactive phosphorus (SRP) indicate levels are higher than desirable. The times that the  $0.02\text{mg}^{-1}$  benchmark level is exceeded are: Arle 94%, Candover 72%, Cheriton 62%, Itchen 98%. The times that  $0.06\text{mg}^{-1}$  is exceeded are: 49% Arle, 20% Candover, 4% Cheriton and 34% Itchen. All are therefore well over the accepted levels. Phosphorus pollution in the Test appears to be a little better, but levels in excess of the acceptable are still recorded on four out of five occasions. Findings indicate that both reactive and unreactive P levels exceed guidelines in the Itchen, whereas colloidal levels are generally OK in the Test and particulate levels are generally below 7%. The underlying message is that levels of P are much higher than we would like them to be.

Q. Tom Davies *The Test & Itchen Association Ltd*

Your threshold figure was 0.02, whereas target values are 0.04 and 0.06. Why was 0.02 selected?

A. 0.02 was set as the threshold for natural conditions



Q. Mike Payne

*NFU Watercress Association*

Similar point as above – ‘natural’ seems to align to high status where what we want is good status.

A. What do people think we should aim for? Charles Rangel-Wilson replied, ‘as high as possible’.

Shirley Medgett (*Environment Agency*) indicated that groundwater levels are at 0.03 so setting a limit lower could be a bit aspirational.

Q. Is there a different signature between domestic and industrial phosphorus?

A. Not really. We don’t know yet.

## **‘Whole of catchment planning – putting the fizz back into the Nar’**

**Charles Rangeley-Wilson – Norfolk Rivers Trust**

The Norfolk Rivers Trust was formed approximately a year ago and has a number of projects underway, including a whole of catchment restoration of the River Nar, which is often referred to as a “*miniature Itchen*”. The sponsors for this project are Coca Cola, the WWF and Catchment Restoration Fund. The key challenges for the Nar are similar to many other chalk streams, with dredging, canalisation, abstraction, and pig, dairy and arable farming runoff all being issues. The starting-point for the work was a Catchment Restoration Plan, with buy-in from all key stakeholders and an excellent geomorphological study undertaken by Natural England. The underlying philosophy for the plan has been to create a restoration that will be ‘timeless’ and based on geomorphological principles that can be largely self-managing. A key element of this is creating stream profiles that operate close to bank height, with a transition from dry to damp to boggy land before the water; creating floodable riparian edges at an overall restoration cost of £20-50/m (£20-50K/km). Working on these principles the plan took 4 months to develop and is now being implemented.

Q. Denise Ashton

*The Wild Trout Trust*

How difficult is it to get the local population to buy into low banks?

A. We are engaged in that now. Public consultation is ongoing.

Q. Alison Wakeham

*VCT Patron*

I was impressed by your level of fund raising. We need more in Hampshire. Which fish species predominate?

A. Mostly trout with a few pike. Downstream it’s coarse fishing. Signal crayfish are now in the lower reaches below Narborough.



## Panel Session

Facilitated by **Tim Nevard – Trustee of the Vitacress Conservation Trust**

**Panel Members: Tim Nevard, Professor Gail Taylor, Steven Brine MP, Dr Jonathan Grey, Dr Pete Shaw, Charles Rangeley-Wilson, Alex Poynter, Dr Steve Rothwell**

Tim Nevard asked Steve Rothwell to explain the circumstances of the recent diesel spill in the Bourne Rivulet at Lower Link Farm. Steve Rothwell explained that as there was a power failure Vitacress had to employ a temporary solution, which involved having to manually re-fuel a generator. The person responsible left the generator unmanned for a short time during which the fuel spilt and some drained down a gully into the Bourne. It is thought that 1000 litres of diesel leaked, 400 litres of which went into the Bourne. Booms were rapidly placed across the river and absorbent material was used to soak up the diesel. Surveys since have shown that wildlife was not affected. Vitacress have engaged with staff on improved safety procedures. External consultants have reviewed Vitacress's processes and their recommendations are being implemented. Steve Rothwell apologised unreservedly.

William Daniel (Famous Fishing) – Have tried to get post spill invertebrate data but with no success.

Shirley Medgett (Environment Agency Southern) – I need to check if we can release that information. We looked soon after the event but couldn't find any evidence of any impact.

Question to Steven Brine MP – How are we to sustain water and river quality with current housing developments?

Steven Brine (MP for Winchester) – In Winchester, we are having a 20 year argument regarding the Barton Farm development. People are more worried about the infrastructure i.e. schools and transport, rather than the water situation. The Water Bill will be brought forward to next year. This will inform the abstraction strategy.

Moya Grove (CPRE Hampshire) – I agree. In the south east there is particularly high development.

Charles Rangeley-Wilson (Norfolk Rivers Trust) – Offwat has to consider ecological impact when considering abstraction, something we currently forget.

Steven Brine (MP for Winchester) – The new Water Bill will be heavily consulted on and this will be an opportunity to raise the ecological issue.

Kathy Hughes (WWF) – The Water Bill is a huge missed opportunity to deal with abstraction reform and to address the current issue of over abstraction. Unbundling of licences will make the situation worse.

Alison Graham-Smith (Natural England) – When will the Government address building regulations so that water usage is lowered?

Steven Brine (MP for Winchester) – I'll feed that back.

Charles Rangeley-Wilson (Norfolk Rivers Trust) - We looked at abstraction on the Nar. This is nearly reaching fully licensed abstraction and if this were reached there'd be no River Nar, so licences need to be reformed.

Steven Brine (MP for Winchester) – I can suggest to the Minister that he talk to DEFRA Select Committee.



Moya Grove (CPRE Hampshire) – We need to redevelop water pricing policy to ensure much greater use efficiency.

Alex Poynter (University of Birmingham) – There seems to be a disconnection between ecology and water supply.

Tim Nevard (VCT Trustee) – Have studies been carried out on Methane composition downstream of sewage works?

Jonathan Grey (Queen Mary University of London) – We are not aware of any in this country. There been some studies in America.

Tim Nevard (VCT Trustee) to Jonathan Grey – How important is methane going to be in the future management of Chalk Streams?

Jonathan Grey (Queen Mary University of London) – Some methane production is the natural situation but some could be run off.

Diana Davidson (Loddon Valley Chalkstream Project) – Is there a link between methane and phosphorus?

Jonathan Grey (Queen Mary University of London) – Not that we've found.

Pete Shaw (University of Southampton) – We haven't explored it.

Tim Nevard (VCT Trustee) to Alex Poynter – Is the issue of swans a critical one?

Alex Poynter (University of Birmingham) – The swan issue is contentious. I don't know how we get round it. The population is bigger than we've ever seen.

Tom Davies (The Test & Itchen Association Ltd) – Swans are not indigenous. They were brought to this country as a source of food. To deal with this issue, regulators need good evidence that swans are a problem.

Steven Brine (MP for Winchester) – Has the swan work ever been presented? We could deal with the swan and badger issue together.

Jonathan Grey (Queen Mary University of London) – PhD student (Kevin Wood) at Bournemouth has 4 publications in 'Plus One' on the impact of swan grazing.

Stuart McTeare (Piscatorial Society) – On the Avon catchment, we have a swan licence so we are controlling them with DEFRA agreement.

Tim Nevard (VCT Trustee) to Charles Rangely-Wilson – Do you think his ideas of lowering river banks will work in Hampshire?

Charles Rangeley-Wilson (Norfolk Rivers Trust) – Yes; the Hampshire rivers that I know, have been less dredged than the Nar. The Upper Piddle has an example of where part of it has not been dredged. This allows the river to do what it wants to do.

Ben Rushworth (Hants and IOW Wildlife Trust) – This sort of work has been done in Hampshire at Winnall Moors Nature Reserve.



Charles Rangeley-Wilson (Norfolk Rivers Trust) – We only have 3 or 4 landowners on the Nar, so this makes the situation easier to deal with.

Andy Thomas (Wild Trout Organisation) – There will be many areas where lowering banks is cheaper.

Charles Rangeley-Wilson (Norfolk Rivers Trust) – We have installed riffles, but maybe not such a good idea as re-shaping the river bed.

Simon Cain (MD Cain Bio Engineering Ltd) – The problem is where anglers expect manicured river banks. On the Avon we have just created sections for anglers whilst leaving the large part of the river untouched.

Tim Nevard (VCT Trustee) to Pete Shaw – Any idea of what the big sources of phosphorus are and how different they are between the Test and Itchen?

Pete Shaw (University of Southampton) – We can't identify sources yet but have an idea of where it's occurring, such as in the Arle tributary and in a section near Ovington, there a large area of phosphorus. The Test less well understood as yet. It seems that some phosphorus is coming out of groundwater. There may be some loss between surface and groundwater. We can help decrease phosphorus by being careful about agriculture and employing catchment-sensitive farming.

Steven Brine (MP for Winchester) – The Government has inherited the septic tank registration process. What are your views on this?

Tom Davies (The Test & Itchen Association Ltd) – There is huge disappointment that we have pulled back from registration. I believe that there is a lot we can do to raise awareness. Most people are not aware of the capacity of their tank and how to maintain it. Dishwasher tablets should be low or non phosphorus. The banning of phosphorus in washing detergents should also happen.

Shaun Leonard (The Wild Trout Trust) – We met with the Minister in July and raised these points. I can send a copy of the paper to Steven Brine.

Alison Graham-Smith (Natural England) to Steven Brine – What are they hoping to achieve in the summit in Stockbridge in Hampshire?

Steven Brine (MP for Winchester) – I can't speak for a colleague. I'll ask him.

Tim Nevard (VCT Trustee) to Charles Rangely-Wilson – Why was project on the Nar so successful?

Charles Rangeley-Wilson (Norfolk Rivers Trust) – We acted quickly when funding sources became available and it was good to have WWF support.

Tim Nevard (VCT Trustee) – What could the Forum 'headline' next year?

Moya Grove (CPRE Hampshire) – Flows and velocities

Alex Poynter (University of Birmingham) – Velocity and discharge.

Moya Grove (CPRE Hampshire) – We need better studies to support our suspicions on flow/velocity/discharge.



Alex Poynter (University of Birmingham) – We need to think about the impact of the changing climate too.

Steve Rothwell (Vitacress) – We need to look more closely at engineering solutions.

Alex Poynter (University of Birmingham) – We also need to think about biological engineers.

Gail Taylor (University of Southampton) – We need to identify base data as we move towards a changing climate.

Lawrence Talks (Environment Agency) – We need ecologically-based flow targets for Chalk Streams, as there is currently no consensus on this. We need to get Water Companies on board.

Steve Rothwell (Vitacress) – We should take an independent look at Alresford Pond.

Alison Graham-Smith (Natural England) - We are looking at this.

Tom Davies (The Test & Itchen Association Ltd) – I think we should continue to pursue the phosphorus issue.

William Daniel (Famous Fishing) – I agree, also tracking-down where the key sources are.

Lawrence Talks (Environment Agency) – We need some social perspective on how to engage communities, as well as more research on potential climate change impacts.

Tom Davies (The Test & Itchen Association Ltd) - There are some projects going around e.g. 'Keeping Rivers Cool' and we could incorporate that next year.

Kerry Evans (Ull) – We have already done some work on mapping climate change.

William Daniel (Famous Fishing) – The swan issue should also be on list for next year.

Lawrence Talks (Environment Agency) – In winter there's less cover. Value of wooded debris could be a good topic.

Shaun Leonard (The Wild Trout Trust) – DEFRA has its 'Love Your River' initiative, which has had no impact so far

**Tim Nevard (VCT Trustee) thanked the participants, asked them back for the 7<sup>th</sup> in 2013 and closed the Forum**