

Chalk Rivers meeting for the Ecology of the Ems and Lavant Statements, Notes and Action Points from the Meeting

(Colour coding - Statements made by NH, Questions raised by NH, General comments, Recommendations, Actions)

Attended: Nigel Holmes (NH) Damon Block (DB), Catherine Fuller (CF), Charles Bacchus (CB) Sean Ashworth (SA), Katherine Holmes (KH), Jon Barnes (JB), Julian Ridge (JR) Charlie Murray (CM)

The notes below are not in the order taken in the meeting, but have been separated into the two rivers.

Approach to restoration strategies – no regrets options

Lavant

Flow Characteristics

- The flow fails in Chichester every year
- At Chichester the river now flows less than it used to but would always have dried
- Above Singleton the river is winterbourne
- At Singleton there are reliable springs and the river flows on average 8 – 10 months of the year, although it can flow all year. Flows only fail for longer in drought years

Fisheries

- There is very little fish data for the Lavant ✓ agreed by DB.

The bottom end of the Lavant will be surveyed in the summer as work being done for the WFD.

What fish could there be in the upper reaches of the Lavant? Is it reasonable to expect that there won't be any above the sewage treatment works except those washed in from local ponds in a flood ✓ agreed by DB

In the stretch below the sewage treatment works sticklebacks and eels have been recorded.

- The Lavant IS NOT a priority fish site as it periodically dries out (and probably would always have done so). ✓ Agreed

However, the bottom end of the Lavant is worth looking at where the river is perennial

Action Ecological appraisal to overlap invert and fisheries surveys for this location in the future.

Macrophytes

There is little data collected on a regular basis and thus nothing reflecting the different flows

Damon has River Corridor Surveys

Action CM to obtain these and send to NH

- The winterbourne community appears to be as good as it ever was and contains no perennial species such as *Ranunculus* or *Berula*.
- At the discharge point the community has winterbourne species and those indicative of perennial flow.
- There is additional data within the Invertebrate surveys – This information is not always accurate, although it can be useful.

Invertebrates

- Twin span analysis of the data indicates that there are a cluster of sites upstream from Charlton supporting interesting winterbourne communities ✓ Agreed by CF

CF commented that the only location for *Phagocata vitta* (flatworm) in Sussex is on the Ems by the Fox Goes Free.

- An extra month of water would make no difference to the invertebrate/macrophyte or fish communities. ✓ Agreed
- Down stream of the Sewage Treatment works the invertebrate community is still OK, reflecting the good habitat. ✓ Agreed

Recommendation:

- **Undertake long term monitoring, sticking to the same sites, but carrying them on a yearly basis. The obvious season for doing this would be April (spring) with a second in the summer.**

GQA site will be retained as well as the fish and macrophyte sites

- The bottom end of the Lavant supports a perennial community which is indicative of a reasonable chalk stream, but with nothing special, although worth looking after
- There appears to be impacts of surface water runoff.

There is a need for a new chemical monitoring site at this lower end in addition to the sites proposed that will be undertaken at the same time as flow monitoring.

Identify a site at the bottom of the Lavant below where the two watercourses, which skirt around the city join.

Action SA/K to identify a site and start monitoring.

SA tabled a map indicating the sites where the Agency licences the disposal of pesticides to ground – these occur on the Ems and Lavant.

**Action: SA to provide a copy of the map to NH
SA to provide an update of the water body boundaries for the WFD and info on the reference condition**

Water Quality

- There appears to be no real problems with regard to water quality

Ems

Flow Characteristics

- Historically the perennial head for the Ems was at Racton Dell (Lords Pond). This was impacted by the abstraction from Walderton following the change in licence in 1969. This allowed Portsmouth Water to take on average 6 million gallons per day, which when proposed raised environmental concerns locally and led to the creation of the Augmentation scheme. Once the river flow drops to 0.5million gallons per day the Augmentation starts and 0.25 million gallons per day are put into the River just upstream of the canal stretch.
- Flow has never failed below Westbourne Mill
- Top end of the Ems is at winterbourne.

Fisheries

- There was a trout population on the river as far as Stoughton
- 1960s Sea Trout migrated into the Aldsworth Arm where they were poached
- The river is described as having run black with trout.
- Aldsworth Arm appears to be “knackered”
- The Sussex Angling Society protected Lords pond with sluice boards at the same time that the abstraction licence was issued in the late 60’s.
It is reasonable to assume some stocking has taken place. ✓ Agreed

The national fish monitoring sites on the map are wrong.

SA logged a Bullhead mortality on the river Ems when working for Ecological Appraisal in 2003. This occurred on the stretch through Guy Schoffield's land and appeared to be the result of work undertaken by the EWF.

DB stated that the Lumley Mill fish survey sites would continue. It was last undertaken in 2001 and will be resurveyed in the summer.

A further survey would be valuable at Racton Dell

Action agreed by DB

Operations Delivery

- There is a need to review the Structures on the Ems and develop a water level management plan.

NH put the configuration of the different watercourses and structures at the bottom end of the Lavant into context and described ideas regarding changes in management of the structures and river restoration options.

DB had concerns about the low flows that these might lead to in the summer. Given that the ponded reach is not a permanent feature this is a consideration, but not a concern at this time of year.

DB agreed that it is OK to trial the suggested change in management at the moment.

DB reported that when undertaking work to collect Eels at Brook Meadows there were brown trout in good numbers.

Questions were raised regarding the trout populations and whether they might be a native population as well as the genetics of Sea Trout. Southampton University and Richard Horsfield have undertaken some work regarding genetics.

Action CB to contact Richard and obtain results/references for inclusion in NH report

Questions were raised regarding migration of Eelers and the tidal flap, which close on the incoming tide. There are still a number of eels in the bottom of the Ems although there was a feeling that the flap valves are having an impact.

- Provisional Assessment for Fisheries – River Ems is in a poor – bad state
- All reaches are impacted – at the top end by low flows
 - at the bottom end by structures
- Overall it appears that the structures are as important as abstraction
- Any efforts to improve the Ems will be rewarded as the species are still there just in low numbers.
- There are no Fisheries Designations for either river – This is not true there is a designation for the River Ems. SA believes this is a Freshwater Fisheries site.
Action SA to check this information and pass the boundary information to NH

Macrophytes

- The top end of the Ems to just below Walderton is “knackered” and supports mainly terrestrial vegetation. When flow does return winterbourne species grow, so are known to be held within the seed bank
- There are still indicators of perennial communities at Racton Dell and on the Aldsworth Arm.
- There are impacts of ponding and silt caused by structures

Invertebrates

- There are interesting invertebrate communities on the Ems. Including a *Niphargus spp*, which is classic of winterbournes.
- Twinspan analysis of Racton Dell suggests that there are a mixture of winterbourne and perennial invertebrate species.
- Invertebrates are indicative of perennial water downstream
- BMWP scores are reasonable.

CF suggested it would be worth looking at the life scores for the Ems

Action: CF to look at the data in more detail

Downstream the sampling regime is focused on riffles and do not show the ponding impacts so well.

Recommendations:

- **WFD Surveillance is undertaken at one site for all the different survey types**
- **Match fish and invertebrate surveys at a couple of locations, which are the ‘best locations’ on the chalk river.**
- **Invertebrate sampling would be valuable and interesting at Racton Dell.**

GQA sites are fixed and continuing. Although there was confusion regarding the exact location of Ecological Appraisal surveys at Lumley Mill

Action CF/DB to resolve location of monitoring points at Lumley Mill.
Once resolved send a JPEG of where they are to NH

Ideally GQA sites should be surveyed yearly.

Water Quality

There is little information regarding water quality on the Ems, although a new sampling programme has been set up. Due to low flows only 4 sites have been sampled since June.

Recommendation: Where water quality sampling is undertaken, as part of the analysis, rainfall 3 or 4 days before is taken into account. This will give an idea of runoff in relation to water quality.

Action KH to talk to FMD about obtaining this info

SA stated that the RE site at the bottom of the Ems has never failed. However, in 2002 it went from compliant to marginally compliant.

Action SA to find out more about this and whether the trend has continued since 2003

The biology GQA results also declined from a B to a C in 2002
Chemistry GQA was a C in 2003 and 2004.

Action KH to check NIRS to see if there were any pollution incidents which could be attributable to the changes

There is a sewage treatment works at Racton – this service 14 people equivalent.

Have the EA considered environmentally acceptable flow regimes for the Ems or Lavant? These have been set for other chalk rivers including minimum flow requirement, ranges etc. NO

Recommendation:

- Look at data in more depth to consider biologically what should be there and what this community would need.
- Consider using the CAMS methodology to do this

Using life score comparisons in low flow/high flow conditions might give an idea of a more acceptable flow regime.