**Tyne Catchment Partnership Meeting**

**Friday, 6th March 2015**

**Howdon Sewage Treatment Works, Wallsend**

**Apologies**

Peter Bell (Gateshead Council), Jim Heslop (Environment Agency), Monique Speksnyder (Natural England), Derek Hilton-Brown (Newcastle City Council), Clare Ross (Gateshead Council), Mary Weatherby (Environment Agency), Sarah Tooze (North Pennines AONB Partnership), Tony Hanson (South Tyneside Council), Trevor Dixon (Northumberland County Council)

**Present**

Sarah Beeson (Northumberland Wildlife Trust), Susan Mackirdy & Abi Mansley (Tyne Rivers Trust), Alistair Lockett (North Pennines AONB Partnership), Clare Deasy (NWL), Michelle Hogg & Amy Ridgeon (South Tyneside Council), Phil Lynch & Stuart McLeod (Port of Tyne), Clare Steward (Environment Agency), Neville Geddes (Forestry Commission), Phil Hartley & Lindsay Bramwell (Newcastle City Council), Hugh Potter (Environment Agency), Hugh Clear-Hill (Northumberland County Council), Lynne Dunleavy (Northumbria Regional Flood & Coastal Committee), Emma Craig (Northumberland Wildlife Trust), Tony Baines (NWL)

**Presentation – Peatlands – Alistair Lockett, NP AONB Partnership**

The Tyne catchment covers about a third of the AONB. The Peatland Project started in 2006. The aim is to address moorland drains cut into peat from WW2 onwards, mostly to improve land for red grouse or sheep grazing. Today it is understood that draining peat is not a good thing, so there are payments to block up these grips (e.g. agri-environment schemes, Biffa Award etc). The N Pennines has dense areas of grips.

One approach is to create peat plugs using a low-pressure digger. This work has benefits for grouse chicks as the rewetted areas are rich in invertebrates to feed on. There are still 1,000km of grips left to survey or block, as well as dealing with bare peat areas (approximately 550ha of bare peat in the Tyne catchment – mostly on the watershed with the Eden and the Tees), peat haggs, or deeper peat gulleys. The highest priority is the actively eroding sites.

Interventions in eroded areas include:

1. Reducing / removing grazing (sheep and rabbits). This involves installing a fence which can be controversial. Two gates are always installed so the area is still available for reduced grazing – although the sites are often the very top of a farm’s fell land, and the sheep rarely heft themselves up there anyway. This gives cotton grass a chance to grow back.
2. Restoring the hydrology. A combination of coir rolls, leaky dams, slow-the-flow techniques, sediment traps and heather bales can be used.
3. Reprofile peat cliff edges / haggs / gulleys so that peat is not lost into streams or into the air (loss of carbon).
4. Heather brash on bare peat areas. This protects from frost heave in winter and drying out in summer. Included in the brash are heather seeds and mosses. Scattering heather brash is a task where local community / volunteers can get involved.
5. Revegetation techniques. This may involve applying lime, moorland seed and fertiliser in year 1 of a scheme. Knowing the pH to start with is critical to knowing how much lime to apply.

The Peatlands Project has had good results. Scientific research and monitoring from partner projects (Moors for the Future) shows reduced storm flow lag times. After heavy rainfall the water can drop in pH about 0.2 or 0.3 which is enough to flush out metals. Reducing the lag times will help with this impact. Sometimes vegetated areas have higher heavy metal concentrations – the peat is storing the metals. If these areas dry out in summer, the peat and the heavy metals are washed down. More research on this topic would be good. It is also unknown how the peat work is reducing lag times much further downstream in places like Haydon Bridge. It would be good to have more community involvement.

Monitoring can also take place on water colouration. A Durham MSc student has been looking at sediment movement at Allendale and two papers will soon be published. **Alistair will circulate these**. Some community citizen science can take place with vegetation monitoring / dip wells.

The Project is now entering a new phase (and will become Peatland Programme). There is a LIFE bid currently in, for £9million over 5 years, in partnership with the Yorkshire Peat Partnership and the Forest of Bowland AONB Partnership. Restoration targets include 4,000ha of bare peat. EA and NWL are also providing some of the required match-funding. News is expected back about the LIFE bid in June or July.

**Presentation – Ouseburn Evidence & Measures – Abi Mansley, Tyne Rivers Trust**

The Ouseburn Evidence & Measures project builds on this approach from other catchments in the Manchester / Cumbria area. The idea is to use all the existing data sources to build up a picture of the sources of problems in a catchment, a bit like forensic evidence used in a trial. This works well on catchments with multiple problems and no real consensus on what actions to take.

In the case of the Ouseburn the project will focus on water quality. Lots of data has been gathered over the past 6 months, and it is combining these datasets from different partners (e.g. EA, NWL, academic studies) where it starts to show results. Data can be looked at in terms of changes over time, changes upstream / downstream, changes with flow, and types of pollution.

Analysing these patterns closely can pin-point specific areas, for example a specific housing estate where wrong connections are a problem, enabling focused measures. Or start to query whether water quality problems are linked to farming, landfill, cemeteries or wrong connections, for example.

Very early findings show that there is

* A local but significant problem upstream of Callerton – wrong connection or sewage infrastructure
* A sewage contamination problem in Kingston Park outfall, dominating locally but declining in impact until
* A sewage or wrong connection problem near Salter’s Bridge, possibly from the Forest Hall / Killingworth area, declining until Jesmond Dene

The next steps are to hold two workshops in May & June, one is the Evidence workshop and one is the Measures workshop. At the evidence workshop, weight ( + - or 0 ) can be given to the information provided in packs as to whether data supports a suspected cause or not. This time allows stakeholders to gain a common understanding and have evidence-based discussions on what problems are and how to deal with them. The Measures workshop, critically involving the same people, enables everybody to programme actions armed with the best available data and the project’s momentum.

In the future it is hoped to apply to approach to other waterbodies in the Tyne such as the Don or the Team.

The partnership wondered if the old coal mines in Callerton had been included in the thinking, as often they can go underground and so link waterbodies. Steve Lowe suggested looking at the Durham Light Infantry website for information about coal mines in the area. **Action Abi** – circulate a list of the data sources used, in case the partnership can spot a data gap.

**Presentation – Pollution from Abandoned Mines – Hugh Potter, EA**

The Water Framework Directive Abandoned Metal Mines Project (WAMM) is a partnership between the EA, the Coal Authority and DEFRA, targeting abandoned mines for clean-up so watercourses achieve ‘good’ status. Around 1700km of rivers in England are polluted.

One (costly operating costs) example is Wheal Jane Mine (Truro) in Cornwall. The flooded tin mine closed in 1992. About £1.5million every year is being spent by DEFRA on cleaning it up and combating the pollution.

The Northumbria River Basin has most of the priority abandoned metal mines that need to be dealt with for the Water Framework Directive. The aim is to build 1-2 treatment schemes per year across England if funding allows. This may represent about 50 years of work! One of the challenges is land acquisition.

From 2011 to 2015, Defra provided £10.5m to investigate the problem and build sustainable treatment schemes in England. So far about 40 waterbodies have been characterised, reviewed management options at 14 sites, and started clean up works at 2 sites: Saltburn Gill and Force Crag Mine (Lake District).

In the Tyne catchment, looking closely at water quality and flow data, shows about 120t/yr of zinc and 40t/yr lead passing Bywell, and this situation probably has not changed for 20 or 30 years. Detailed work in the Nent & W Allen areas gives a real understanding of the priority sources of the metals. These include Carrsheild, Barney Crag, Coalcleugh, Caplecleugh, Garrigill & Nenthead. There are links from these mines to the Calaminarian Grasslands (often SSSIs, SACs and / or SAMs).

Last year the standard for water quality for zinc, copper, nickel and lead changed, to take account of bioavailability rather than the previous “hardness-related” standard.

Force Crag Mine in the Lake District, owned by the National Trust, discharges 3 tonnes of zinc and cadmium each year, polluting at least 10km of watercourses in Bassenthwaite area. The metals mostly discharge from the main mine water drainage level, but under high flow conditions the tips and lagoons on site are also a significant source.

In September 2013, the Coal Authority started building the first full-scale passive treatment system at an abandoned metal mine in the UK. The treatment system design was developed by Newcastle University and uses ‘Vertical Flow Pond’ technology. The pond, on the site of the old tailings dam, contains a mixture of compost, limestone and woodchips, and removes the metals from the water by binding them up as insoluble sulphides (binding them into the compost). Water stays around 15 hours in the pond. This is the first large-scale application of this technology to metal mine drainage treatment in the UK, and if successful will be used at other mine sites.  The treatment scheme started working in 2014 with estimated benefits of –up to £4.9m over 25 years, at a cost of around £1.5million. It was built by the Coal Authority with DEFRA funds, and will have low operating costs. There was limited space at this site. This is an experimental system and it is not yet known how long it will work for.

Proposals are being developed to tackle the worst of the Tyne metal pollution sites. The EA and Coal Authority will tackle the point source discharges, and are working with Tyne Rivers Trust and the North Pennines AONB to tackle the diffuse sources.

**Pop up news**

Tony, NWL – Clare Deasy has joined NWL in a role to support catchment partnerships

Steve, NWT –

* Thanks to the Tyne Catchment Partnership for supporting the urban streams project.
* The Wildlife Trust will be starting a 3-year HLF-funded project to work on Calaminarian Grasslands. This will involve some soil stripping and may increase the mobilisation of metals.
* A joint project with the Wildlife Trust, Forestry Comission and Tyne Rivers Trust is working on water voles in the Kielder area with a view to re-introduction. An outreach character has been developed. Suggested names for the character are needed!
* The current iteration of Living Waterways comes to an end on the 31st March. Some floating islands (bio havens) are still to do in March (or early April), including a section by Ouseburn Farm. This uses a new (to the UK) technology by “[Frog Environmental](http://frogenvironmental.co.uk/)”. The islands will be tied to the walls so they move up and down with the flow and have plants incorporated into them. The older islands there have become silted up. In the future more floating islands may be funded by the NWL Branch Out Fund (application has been submitted). No news yet on what the new Living Waterways project will look like.
* Otter surveys are taking place across the whole county, including spraint analysis for DNA. This is funded by a legacy left to NWT for otter work. The project will involve local communities, focus on most of the Tyne, and be a longer-scale survey than the one that takes place in the Durham Wildlife Trust area.

Phil Hartley, Newcastle City Council – funding for the remediation of St Antony’s Tar Works has been secured. (Susan Mackirdy added that this was a major development as the site has been polluting the main Tyne at Walker for many years, and Phil and his team had been trying to secure funding to tackle it for a long time.)

Susan Mackirdy – Tyne Rivers Trust

* The trust has submitted a bid for the limited funding to continue as host of the Tyne Catchment Partnership
* TRT has also submitted a bid to the HLF for a volunteer co-ordinator post, which will enable an expansion of the amount of work and the geographical range of work. For instance, River Watch groups are based on where people live but sometimes that effort is needed in other parts of the catchment. And many enquiries from students / graduates can’t currently be met because of staff resource. This post will enable those two elements to be better matched with the need in the catchment.
* TRT is just completing a significant tree-planting programme, of 20,000 trees. This was funded by the Woodland Trust, and it is hoped to do the same in 2015/16 and 2016/17. The planting is focused on areas to help tackle runoff, pollution, bank shading etc (the ‘Woodlands for Water’ mapping didn’t cover the Tyne area). Critically the funding from the Woodland Trust was able to fund some of the staff resource to make the planting happen.

Clare Steward, EA

* Clare distributed a handout based on the current ‘River Basin Management Plan’ consultation, which closes on 10th April (just after Easter). In this region, useful consultation tool kits have been put together with information focused on each catchment, to help organisations give informed responses. **Action Abi** circulate to the Tyne Catchment Partnership. For example, question 1 involves proposed changes to waterbody boundaries, a review of the Highly Modified Waterbodies, and Mitigation Measures. A comment was mentioned about a map in the consultation document not being properly interactive.
* There is a regional workshop planned for the 26th March, looking to draw together themed projects or proposed projects. If some organisations wish to send more than one person please get in touch with Clare or Mary Weatherby.
* The Medium Term Plan is moving towards a 6 year cycle and will be submitted to the EA’s national panel on the 27th May. Before then, there is 5 weeks for partnership project development. What priority projects would the partnership highlight? We need to build up a bundle or portfolio of projects that are ready for funding. (Note they may need 20% match funding). **Action Abi** set up a meeting in April or early May to discuss this further.

Lindsay Bramwell – Newcastle City Council mentioned the European Beaver and their impact on sediment and downstream flow, asking what is the potential in the Tyne? Steve Lowe mentioned feasibility work done by the Wildlife Trust looking at in the N Tyne and the Kielder forest area, though the Forestry Commission has reservations. European Beaver also need broadleaves and aquatic plants. A study from USA has also show the massive effect that the [N American Beaver – different species] has on flows and rivers. Something for the future perhaps.