Tyne Catchment Partnership – Gap analysis

The Gap Analysis was undertaken in autumn 2014 ready for a Tyne Catchment Partnership meeting on 10th December 2014, in Gateshead Civic Centre.

These notes are a 'write up' of the Gap Analysis, with some additional information since. The meeting notes are more a summary of the discussion (and can be read with this document) – these notes are the detail behind the maps that were on the table.

Generally, the picture that emerged is the collective knowledge of the Tyne Catchment Partnership. However, without everybody having detailed knowledge of each project, it was difficult to assess to what extent a project is addressing the base problems.

Executive Summary

The 'Gap Analysis' on the Tyne Catchment Plan was undertaken in autumn 2014. 5 sets of base maps were produced, based on the Plan's goals. These were overlaid with existing projects and partnerships, to see where there might be issues with no projects or partnership.

Findings

On the topic of pollution, there are lots of initiatives working in the urban area, which need co-ordination. Potential 'gaps' in the coverage of projects were Newburn (urbanisation issues); March Burn (phosphate); Derwent Reservoir (phosphorous related problems, linked to impoundments); Colt Crag reservoir, Hallington Reservoir, sediment monitoring at 3 loughs on the Roman Wall. Elsewhere, some initiatives are taking place where the base map hadn't noted any issues.

On the topic of mines / minerals, many organisations are working together and programming activity. The link between mines / minewaters and calaminarian grasslands (and linking to the wider Tyne Sediments Plan) might be a good Partnership project for further detailed thought, to see if there are still 'gaps' to address or timescales to plan for.

On the topic of river habitat & invasives, potential 'gaps' in the coverage of projects include the mismatch between river watch groups / where volunteers are based and the best locations to tackle invasive species. More specifically, at Colt Crag Reservoir and Hallington Reservoirs, there appears to be a problem but no planned solution.

On the topic of flooding, a potential 'gap' includes New Burn (surface water flooding). Generally, however, this set of maps would need refreshing. There are many organisations and communities working together on the flooding or flood resilience topic and the data would need regenerating.

Finally, on the topic of fishery resource, potential gaps include the River Don and the River Team as well as better recording of fish obstructions in urban areas. Again, Colt Crag Reservoir and Hallington Reservoir appeared as a gap in this topic. A closer look at the Kielder area waterbodies and the South Tyne obstructions may be needed to ensure that all feasible locations for fish passes or easements are programmed in.

Data queries – base maps of issues and problems

The picture on many of the issues as well as the current / proposed projects has changed considerably since the 'gap analysis' was done in autumn 2014.

The base map of the issues / problems relied heavily in places on the Waterbody Action Plans (Environment Agency) – regardless if an issue was probable, suspected or confirmed. Since autumn 2014, the WFD data has been updated and the waterbodies are increasingly moving to 'cycle 2'.

Also, there was some overlap between the categories / goals as they were mapped.

On the topic of invasive non-native species, there may well be an under-recording of locations in the more rural parts of the catchment.

In addition, some partners were confused about forestry failures being classed as 'natural' under WFD and the impact of copper downstream.

Data queries – projects and initiatives overlay

There are still some unknowns about the extent to which current projects actually address the underlying problems – so it was a challenging task for partners to consider.

There will be news about the proposed Landscape Partnership Schemes in autumn 2015 which brings together some of the mapped problems in the various areas.

Since the 'gap analysis' meeting, more detailed information about the EA's minewaters programme has been mapped (although this is a long term programme).

Some topics could do with a refreshed, focused view – for example known fish obstructions and the programme of fish / eel passes and easements – with an aim to identify any others for ground-truthing.

The 'flooding' theme technically would need re-doing to draw meaningful, up to date conclusions. There are other organisations who are having a more strategic view of flooding since the Tyne Catchment Plan was published.

Background

The Tyne Catchment Plan was published in 2012 and included over 200 survey responses and 340 issues. These included issues beyond the Water Framework Directive, such as recreation and abstraction issues, both small-scale and large scale issues. However, because of constraints at the time, it wasn't possible to prioritise the issues or devise an action plan. The Plan divided work into two themes, A and B - and had a number of goals under these themes.

www.tynecatchment.org/the-tyne-catchment-plan/projects/

At the partnership meeting in May 2014, it was agreed that some gap analysis would be undertaken to see where there are problems without any partnerships of projects addressing them - “gap analysis”.

Since then, we have mapped many of the issues / problems as well as 44 actions from the Plan and proposed projects in development that would address them, concentrating on the goals under theme A, and concentrating on the most ‘tangible’ projects, both current and proposed.

- Goal A1.1 Pollution (general)
- Goal A1.2 Pollution (mines / minewaters / minerals)
- Goal A2 Healthy River Habitat and Invasive Species (both fish and bankside plants)
- Goal A3 Flooding
- Goal A4 The Fishery resource of the Tyne

The Tyne catchment was divided into three (Main Tyne from Waters Meet; North Tyne, South Tyne) each with a set of 5 base maps (problems) for the above goals, and a set of 5 overlays (partnerships / projects / actions) for each base map. We had mapped issues based on cycle 1 river waterbodies AND lakes AND transitional waterbody.

Note The base map of the issues / problems relied heavily in places on the Waterbody Action Plans (Environment Agency) – regardless if an issue was probable, suspected or confirmed. Since December 2014, some of the information and waterbody statuses have been updated, as well as further moves towards ‘cycle 2’ waterbody boundaries.

Contents

Goal A1.1 Pollution (general)

The 'issues' basemap brought in data from :

- From the WFD 'Reasons for Failure' / The Tyne Waterbody Actions Plans : shaded waterbodies where they have :
    - 'failing elements' of ammonia, phosphate, total phosphorous or tributyltin
    - Tier 1 : diffuse source or point source
    - Tier 2 : arable field, drainage (housing / mixed / road runoff) industrial / trade discharge, land drainage – operational management, landfill leaching, mixed agricultural runoff, sewage discharge (continuous / diffuse / intermittent), trading / industrial estates, urbanisation (transport / other / urban development), waterbody bank poaching
- EA monitoring points for chemistry
- NIRS category 1 & 2 pollution incidents (impact to water) by type (Agricultural Materials & Wastes; Oils and Fuel; Sewage Materials; All Others) – from the CaBA data, but not 'atmospheric pollutants and effects'. The dataset encompasses 2001 – 2013. Note – we now also have access to category 3 & 4 pollution incidents, but only at the waterbody level (not precise points on the map).

There will of course be other issues in the catchment that do not appear on the base maps. Some of these were raised at the meeting, others are just not easy to 'map' or the data are not known.

The ‘existing actions and proposed projects in development’ overlay brought in data from :

- Forest Streams project area (**note** this has changed – September 2015)
- Gateshead GI
- Haltwhistle Catchment Restoration Project
- Headwaters project / co-ordination (the W end of this sub-catchment)
- Landscape Partnership Schemes (Land of Oak & Iron LPS, Allen Valleys LPS, Rede HLF bid)
- Northumbrian Loughs – in partnership with Northumberland National Park
- Nafferton Farm and Whittle Dene (projects C43, C44 in the Tyne Catchment Plan – Agricultural Research and Diffuse Urban Pollution monitoring and remediation), there may also be some work within the Whittle Dene area.
- Ouseburn – Evidence & Measures as well as other initiatives
- River Don
- River Team
- Peat Programmes
- River Watch groups (community based groups carrying out river clean ups who would also report pollution events / monitor water quality)
- Seaton Burn – Tyne Catchment Plan ref C30, tackling urban diffuse pollution from industrial estates, part of a 2 year project in 2012 with Groundwork.
- Tidal Tyne
- Water Rangers areas (Northumbrian Water project)

Main Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Ouseburn (37)
- Don (16)
- Team 49)
- Newburn (6)
- Pont Burn (12)
- March Burn (5)
- Derwent from Nookton to Burnhope (3)
- Derwent Reservoir (2)
- Tyne itself (10)

The EA Chemical monitoring points are well distributed as well as the NIRS (particularly in the more populated areas) – in hindsight better differentiation between the colours for these two datasets should have been used.

The ‘existing actions and proposed projects in development’ overlay shows that :

- The ‘Ouseburn’ initiatives and the proposed continuation of this project to the Don and the Team covers a lot of area. For example in that area is also the Brunton Park scheme, now underway jointly between EA, NWL and NCC. There is also the Ouseburn Evidence & Measures project, and based on the levels of complexity and numbers of issues, the Don (more complicated) and the Team would be the next focus areas - this can potentially be included in the EA’s Medium Term Plan as one project. The Don is a good opportunity to talk to neighbouring catchments and authorities, it also has lots of development pressures. *Update – the meeting itself noted “There was some confusion because of the naming of projects on the map - so there is a need to separate that out, for example on the Ouseburn where there is some funding available, there are lots of current initiatives, and different programmes that would contribute towards solving problems. It needs to co-ordinate working together, possibly with a sub-catchment focus group, for multiple benefits. (PS picked up for action by Tyne Rivers Trust as Catchment Host.)*
- Specifically in the River Don the Tyne Catchment Plan mentioned a proposal to identify integrated measures to improve water quality and reduce flood risk along the Don and its tributaries. Specifically in the Team, the Tyne Catchment Plan presents a current 15-year project to restore ecological value to the Team. There is also the reed bed at Lamesley.
- The ‘Clean Tyne’ project covers the Tyne itself – but does this address the issues of urban development infrastructure, tributyltin compounds, and contaminated land. We did not have mapping to go with the Tyneside Sustainable Sewerage Project, will that address the issues?
- The Land of Oak and Iron Landscape Partnership Scheme covers the Pont Burn waterbody, where there is also a River Watch group. Will the actions in the LPS address the issues of sewage discharge (intermittent / continuous) and industrial / trade discharge (non EPR)?
- The Gateshead GI includes parts of the Land of Oak and Iron project area – along the River Derwent, The Blaydon Burn / Barlow Burn and the main Tyne as far as Ovingham. To what extent can this project, in partnership with the Land of Oak and Iron, deal with the mapped issues on the main Tyne or from upstream (Pont Burn).
- The Nafferton Farm area and Whittle Dene area are projects happening where the ‘issues’ base map didn’t note problems apart from EA chemical monitoring points.
- The NWL’s Water Rangers areas are sometimes in places where we didn’t have any issues mapped. At Corbridge / Stocksfield there is overlap between the River Watch community groups and the Water Rangers. *Update – the Riding Mill River Watch group when looking closely at the data was in ‘development’ stage.*
- The ‘headwaters’ co-ordination project covers the upland parts of the River Derwent. The issues here appear on the map because they are ‘RFF Tier 1 diffuse’ but looking closer at the data the issues are related to abandoned mines, which is dealt with on the topic below.
- The Newburn waterbody is a potential ‘gap’ – its issues are around urbanisation – *note this waterbody is due to change under cycle 2*

- The March Burn catchment has multiple entries in the WAP for phosphate (continuous sewage discharge). We can't see any project that covers this area, apart from where it joins the Tyne there are both a River Watch Group and a Water Rangers area. One of the WAP projects proposes a reed bed treatment scheme, as well as work on the Slaley Hall Sewage Treatment Site.
- The Derwent Reservoir has 2 counts of phosphorus-related problems in the WAP, both of which appear to be related to impoundments and the need to identify actions. This is a further gap that has no current or proposed project to address it.
- *Post meeting update : the proposal to roll out and Evidence & Measures approach has since been included into the Medium Term Plan, which is a welcome next step forward*

North Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Deadwater Burn (6)
- Akenshaw Burn from source (2)
- Lewis Burn from source to Akenshaw Burn (4)
- Lewis Burn from Akenshaw to N Tyne (6)
- Cranecleugh Burn (8)
- Blakehope Burn (2)
- Hareshaw Burn (3)
- Colt Crag Reservoir (10)
- Hallington Reservoirs (2)

The EA Chemical monitoring points cover the North Tyne / Rede itself but there are few in the very rural parts of this catchment, and there are also few NIRS (as it is a rural area). In hindsight better differentiation between the colours for these two datasets should have been used.

The 'existing actions and proposed projects in development' overlay shows that :

- The Forest Streams project covers the Deadwater Burn, Akenshaw Burn, the two Lewis Burns, the Cranecleugh Burn and the Blakehope Burn. All of the RFF here are 'diffuse source' in RFF Tier 1 and 'forestry' in Tier 2. Actions include bank stabilisation, blocking old drains, broadleaf planting, woody debris in channel (**note** – the project's waterbodies have slightly changed – September 2015).
- The Redesdale Landscape Partnership Scheme bid includes the Blakehope Burn area which may also help, as well as many areas mapped as peat.
- The Hareshaw Burn appears on this list because of 'urbanisation – other'. Actions include fish passage easement and removal of weirs. This topic is dealt with below.

- There is a River Watch group at Bellingham although no specifically mapped pollution problems near here, apart from a NIRS level 2 to the west of Bellingham – date unknown. *Update – the group in this location never really got established.*
- The 10 issues on Colt Crag all relate to phosphorus or phytoplankton and appear to be based on forestry, mixed agriculture, or impoundments. The WAP does not specify actions to address this location so here is a potential gap.
- The 2 issues on Hallington Reservoir both relate to phytoplankton. Again, the WAP does not specify actions to address this location so here is a potential gap.

South Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Nent from Source to South Tyne (10) – *7 of the issues here appear on the map because they are 'RFF Tier 1 diffuse' but looking closer at the data the issues are related to an abandoned mines, which is dealt with on the topic below. The other 3 are due to urbanisation.*
- Wellhope Burn (4)
- Allen from Source to W Allen (2) - *The issues here appear on the map because they are 'RFF Tier 1 diffuse' but looking closer at the data the issues are related to abandoned mines, which is dealt with on the topic below.*
- Allen from W Allen to South Tyne (2) - *The issues here appear on the map because they are 'RFF Tier 1 diffuse' but looking closer at the data the issues are related to active or abandoned mines, which is dealt with on the topic below.*
- W Allen from Wellhope Burn to Allen (18) - *The issues here appear on the map because they are 'RFF Tier 1 diffuse' but looking closer at the data the issues are related to abandoned mines, which is dealt with on the topic below.*
- Carr's Burn (1) - *The issue here appears on the map because it is 'RFF Tier 1 diffuse' but looking closer at the data the issue is related to an abandoned mines, which is dealt with on the topic below. Also, in 2014 Carr's Burn moved from 'moderate' to 'good' WFD status.*
- Allen from W Allen to South Tyne (17)
- South Tyne from Allen to North Tyne (20) - *The issues here appear on the map because they are 'RFF Tier 1 diffuse' but looking closer at the data the issues are related to abandoned mines, which is dealt with on the topic below.*
- Greenlee Lough (1)
- Crag Lough (1)
- *During the December 2014 meeting, a Tyne Catchment Partnership member also queried whether Grindon Lough is also eutrophicated. It is monitored differently to the other Roman Wall loughs as it is outside the SSSI / SAC area. It is a different waterbody that varies greatly in area, is very shallow, and takes in surrounding grassland when it flood. The EA have a new phosphate model for eutrophication – by*

some measures Grindon fails and by others it does not – so there is uncertainty on its classification.

The EA Chemical monitoring points cover the Tyne/ South Tyne / Allen itself but there are few in the very rural parts of this catchment, and there are also few NIRS (as it is a rural area) – although a cluster of NIRS near Haltwhistle (diesel, sheep dip, silage liquors, fire-fighting run-off and one not identified). In hindsight better differentiation between the colours for these two datasets should have been used.

The 'existing actions and proposed projects in development' overlay shows that :

- The Allen Valleys Landscape Partnership Scheme covers a lot of this area, and it does include actions to address diffuse metals pollution. However, it doesn't extend downstream as far as the South Tyne from Allen to North Tyne, which may be a potential gap. Neither does it cover the Nent which may be an additional gap. During the meeting the map was annotated to suggest a 'living waterways' type project to address issues in rural areas e.g. misconnections and septic tanks.
- The 'headwaters' co-ordination project covers the upland parts of the South Tyne and Allen Valleys area. Also, the Peatland Programme covers large areas of land here. *Update – The Tyne Catchment Partnership had a presentation on the peatland programme in spring 2015.*
- There are River Watch groups at Haydon Bridge and Haltwhistle (the map shows one in the Allen Valleys but this was 'developing'). There are no Water Rangers in this part of the Tyne.
- As a result of discussions coming out of the December 2014 meeting, some sediment monitoring or inflow / outflow monitoring was suggested for the Roman Wall loughs to see how the eutrophic / mesotrophic status has changed over time, also to understand the nutrient load and the effects of mixing, and to monitor the interventions already completed. There are currently no funds for this.
- Greenlee Lough is part of the Haltwhistle Burn catchment, however Crag Lough and Grindon Lough are not (potential gap). Some actions from the Haltwhistle Burn project are being completed in 2015 which may help issues noted in the Greenlee area.

Goal A1.2 Pollution (mines/minerals)

The 'issues' basemap brought in data from :

- From the WFD 'Reasons for Failure' / The Tyne Waterbody Actions Plans : shaded waterbodies where they have :
    - 'failing elements' of zinc, cadmium or copper
    - Tier 2 : abandoned mine, active mine, contaminated land
- Coal & Metal Mine locations and discharges – data from both EA and Natural England

- Pollution from minewaters mapped for Tyne Catchment Plan in 2012
- Contaminated sediments mapped for Tyne Catchment Plan in 2012
- St. Anthony's Tar Works location

There will of course be other issues in the catchment that do not appear on the basemaps. Some of these were raised at the meeting, others are just not easy to 'map' or the data are not known.

The 'existing actions and proposed projects in development' overlay brought in data from :

- Carr Shield spoil heap (trial)
- Landscape Partnership Scheme – Allen Valleys
- Nenthead & Nenthall biological trial
- Nenthead spoil stabilisation trial
- Reed bed Team Valley
- St. Anthony's Tar Works
- Minewater & diffuse source treatment / interventions (W Allen, E Allen, Bolt's Burn, Nenthead, Barney Crag)

Main Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Derwent from Nookton Burn to Burnhope Burn (3) – *all 3 of these relate to zinc (abandoned mine)*
- Horsleyhope Burn (2) – *both of these relate to zinc ('natural' mineralisation)*
- Don (4) – *all of these relate to contaminated land*
- Team (4) – *all of these relate to contaminated land*
- Tyne itself (2) – *both of these relate to contaminated land*

Both EA and NE datasets show discharges recorded to the west of this third of the Tyne (approximately around Blanchland / Consett).

The 'existing actions and proposed projects in development' overlay shows that :

- *Update summer 2015 - the St Anthony's Tar Works has hopefully secured growth deal funding from the North East Local Enterprise Partnership (subject to confirmation). The work should be carried out in 2015 with monitoring in following years.*
- The Reed Bed in the Team Valley may address some or all of the 4 points relating to contaminated land in this waterbody.
- Gaps in the coverage of projects therefore appear to be the Don, the Tyne itself, and the two upper Derwent waterbodies.
- *Update summer 2015 - The Tyne Catchment Partnership has since had a presentation from Hugh Potter, the specialist in the EA on the topic of Abandoned Metal Mines.*

He has a national programme of works – 17 of these are waterbodies in the Tyne. 15 of those will have further investigations, the remaining 2 will have monitoring at a single point at the bottom of that waterbody. 2 of this programme are in this part of the Tyne (the remaining 15 are all in the S Tyne area) – the Horsleyhope Burn waterbody (which will have monitoring at the bottom of the catchment) and the Derwent from Nookton Burn waterbody which will have further investigations.

North Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Lewis Burn from Akenshaw to N Tyne (2)
- N Tyne from Lewis Burn to Tarset Burn (2)
- Cranecleugh Burn (2)
- Chirdon Burn (2)
- N Tyne from Lewis Burn to Tarset Burn (2)
- N Tyne from Tarset Burn to Rede (2)
- N Tyne from Rede to Gunnerton Burn (2)

All of these relate to copper, with 'natural' source.

There are no closed mine waste facilities or metal mines locations discharges in this area.

The 'existing actions and proposed projects in development' overlay (note there was no overlay of projects relevant to this topic in this area) shows that :

- During the meeting there was a discussion about the forestry being classed as 'natural' under the waterbody action plans and queries about what is the impact of the copper downstream? There was confusion as to why some waterbodies fail for forestry and others don't, some are heavily modified for forestry and some places are impacted by the dam and forestry.

South Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this pollution theme are (with counts) :

- Nent (7) – *2 of these are zinc, 5 are fish, all are related to abandoned mine*
- Wellhope Burn (4) – *all of these are zinc*
- W Allen from Source to Wellhope Burn (9) – *all of these are zinc*
- Allen from Source to W Allen (2) – *both of these are zinc*
- W Allen from Wellhope Burn to Allen (18) – *all but 3 of these relate to zinc and abandoned mines, the others are fish with zinc being the pressure*

- Carr's Burn (1) - *this is related to zinc, a suspected issue relating to an abandoned mine. Although in 2014 Carr's Burn moved from 'moderate' to 'good' status*
- Allen from W Allen to S Tyne (17) – *15 of these are zinc, the other 2 are fish, all related to both abandoned and active mines*
- S Tyne from Allen to N Tyne (20) – *all of these are zinc relating to abandoned mines*

There are Closed Facilities / mapped discharged both inside these waterbodies and outside.

The 'existing actions and proposed projects in development' overlay shows that :

- 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 (The Allen Valleys Landscape Partnership Scheme)
- Note, there is a link between the mines / minerals / minewaters issue, and the calaminarian grasslands. Many organisations are already looking at the mines and minerals issue, so there is an assessment to be made if there are still 'gaps' to address or project timescales to address.
- *Update summer 2015 – the national programme of works covers most of the waterbodies listed in the WAP as having this type of pollution problem, apart from Carr's Burn. (It is not known why at this stage – probably because in 2014 it moved from 'moderate' to 'good' WFD status). In addition, further areas on the South Tyne and Tyne Valley are covered by this programme. All are due for further investigations apart from the Hartley Burn from Black Burn to S Tyne (which is SW from Featherstone Castle) – this waterbody will have specific monitoring. The Programme covers the additional discharges that were visible on the base map of issues.*
- *Is there an update on the Carr Shield spoil heap trial? And the Nent spoil stabilisation trials? Notes from last summer had down 'remediation feasibility studies at Nenthead and Barney Crag mine – biggest impact in W Allen / Barney Crag / Nent area. 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).*

Goal A2 River Habitat / Invasives

Note : invasive species are 'beyond' WFD. A co-ordinated approach is good for the Partnership. Local people clearly care a great deal about this issue.

However, It is beyond the time allowance of the Tyne Catchment Partnership meeting to focus closely on the invasive species data. The detail here would be useful for someone else to draw together a programme of timely practical work.

The ‘issues’ basemap brought in data from :

- From the WFD ‘Reasons for Failure’ / The Tyne Waterbody Actions Plans : shaded waterbodies where they have :
    - ‘failing elements’ for invertebrates, macrophytes, phytobenthos or phytoplankton
    - Tier 1 : flow
    - Tier 2 : forestry or land use - forestry
- EA monitoring points for biology or flow
- Invasive Species data (*in hindsight better differentiation of the colour scheme would have been useful)* from :
    - Tyne Rivers Trust data separated out into species Japanese knotweed, Giant Hogweed, Snowberry, Himalayan Balsam – *update : it became clear that some of these GIS points may have been dealt with in previous years*
    - EA invasive species data (invasive in-river plants / crayfish)
    - Invasive species from North East Records Centre *note, some records are unconfirmed*

There will of course be other issues in the catchment that do not appear on the basemaps. Some of these were raised at the meeting, others are just not easy to ‘map’ or the data are not known.

The ‘existing actions and proposed projects in development’ overlay brought in data from :

- Brunton Park / Brunton Burn – the flood alleviation project will bring some habitat improvements
- Calaminarian Grasslands
- Forest Streams project area (**note** project area slightly changed – Sept 2015)
- Gateshead GI
- Haltwhistle Catchment Restoration Project
- Landscape Partnership Schemes (Land of Oak & Iron LPS, Allen Valleys LPS, Rede HLF bid)
- Peat Programmes
- Nafferton Farm & Whittle Dene
- River Watch groups & Headwaters project
- RSBP Farm Bird Advice project area
- Water Vole project area (initially mink monitoring) *Update summer 2015 – now moving into phase 2.*

Main Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this river habitat and invasive species theme are (with counts) :

- Derwent from Burnhope Burn to Tyne (6) – *all of these relate to flow / impoundment – water storage and the need for mitigation measures.*
- Pont Burn (5) – *all these points relate to the Pont Burn*
- Team (21) – *all these points relate to invertebrates*
- Don (18) – *all these points relate to invertebrates*
- Ouseburn (16) – *all these points relate to invertebrates*
- Tyne itself (6) – *all these points relate to invertebrates*

The invasive species data are spread throughout this part catchment, particularly along the Tyne Valley. The 'existing actions and proposed projects in development' overlay shows that :

- The 'reasons for not attaining good status' for invertebrates have a range of sources including drainage – road run-off / housing; trading / industrial estates, contaminated land, flood protection structures, arable farming, sewage discharge, urbanisation. The WAP includes proposed actions.
- In the Derwent and the Pont Burn, the Land of Oak and Iron Landscape Partnership Scheme covers this area. However, the Tyne Catchment Partnership pointed out clear that there is only £10k set aside in the Scheme for this work, which will need boosting somehow. The Gateshead GI project also comes into this area, but it is unclear how much river habitat and invasive species this is able to bring about and in what timeframe.
- There are River Watch groups along the Tyne who are able to help tackle invasive species, however there are large areas beyond the town / village centres where the species have been noted.
- There is work going on at Nafferton Farm and Whittle Dene where in-situ demonstrations of reducing diffuse pollution from agriculture could have habitat benefits across the whole Tyne catchment
- The peat programme and the headwaters co-ordination will bring about habitat improvements in the upland part of this area. The headwaters co-ordination is working on the INNS issue.
- In addition, the Partnership noted that the Whittle Dene has Himalayan balsam issues at Newburn Country Park

North Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under this river habitat and invasive species theme are (with counts) :

- Deadwater Burn (6) – *all of these relate to forestry*
- Akenshaw Burn (2) – *both of these relate to forestry*
- Lewis Burn from Akenshaw to N Tyne (6) - *all of these relate to forestry*
- Lewis Burn from Source to Akenshaw (6) - *all of these relate to forestry*
- Cranecleugh Burn (8) – *all of these relate to forestry*

- Chirdon Burn (1) - *this relates to forestry*
- Fletchlaw Burn (1) - *this relates to forestry*
- Houxty Burn (1) - *this relates to forestry*
- Warks Burn from Source to Middle Burn (1) - *this relates to forestry*
- Middle Burn (1) - *this relates to forestry*
- Blakehope Burn (2) – *both of these relate to forestry*
- Kielder Water (2) – *both of these relate to macrophytes which is attributed to impoundments*
- Colt Crag Reservoir (8) – *half of these relate to forestry, the other half are phytoplankton which is attributed to impoundments and agriculture.*
- Hallington Reservoirs (4) – *all of these relate to phytoplankton which is attributed to impoundments and 'other'.*

The invasive species data are spread along the North Tyne and the Rede. The 'existing actions and proposed projects in development' overlay shows that :

- *Update : The Tyne Rivers Trust has been having a focused season of INNS surveys in Redesdale to update the mapped data*
- The Tyne Catchment Partnership noted that there may be an under-recording of INNS data in this rural area.
- There are no River Watch community groups in this area (who could tackle the invasive species with practical work)
- The Forest Streams project covers all the waterbodies with 'forestry' noted in the WAP, as well as 5 others. The Redesdale Landscape Partnership Scheme may also be able to tackle outstanding projects in the Blakehope Burn waterbody. During the meeting there was a discussion about the forestry being classed as 'natural' under the waterbody action plans and queries about what is the impact of the copper downstream? There was confusion as to why some waterbodies fail for forestry and others don't, some are heavily modified for forestry and some places are impacted by the dam and forestry (**note** project area slightly changed – Sept 2015).
- The Water Vole project boundary (partnership project between Northumberland Wildlife Trust, Forestry Commission and Tyne Rivers Trust) covers many of the waterbodies with 'forestry' noted in the WAP. *Update summer 2015 – this project is moving into phase 2.*
- The WAP notes at Colt Crag and at Hallington Reservoirs that action is required to confirm the data, so the position may have changed since the gap analysis has been done, or it may be a potential gap in the issues / projects. At the time of writing, both are still 'moderate' under WFD although the cause of the impact is 'unknown' or 'technically infeasible'

South Tyne

There are no waterbodies that have multiple Reasons for Not Attaining Good status under this river habitat and invasive species theme in the WAP. There may be issues there, but merely not mapped.

The invasive species data are spread along the South Tyne and the Allens. The 'existing actions and proposed projects in development' overlay shows that :

- There are River Watch groups at Haltwhistle and Haydon Bridge that might be well-placed to help tackle invasive species nearby. *Update summer 2015 – the Tyne Rivers Trust is organising volunteer tasks to tackle the most up-river locations of some of these*
- The Allen Valleys Landscape Partnership Scheme covers some of the invasive species areas. Does this scheme include tackling this topic?
- The 'headwaters' co-ordination group is working on the topic of invasive species across the upland parts of the catchments of the Tyne – Wear and Tees.
- The Haltwhistle Catchment Restoration Project is in this third of the Tyne.
- The Calaminarian Grasslands appear on the map in this area. There is a wider Tyne Sediments Plan which includes creating check weirs which will provide metal rich inputs to relevant SSSIs. Could calaminarian grasslands be a future topic for the Partnership?

Goal A3 – Flooding

The 'issues' basemap brought in data from :

- From the WFD 'Reasons for Failure' / The Tyne Waterbody Actions Plans : shaded waterbodies where they have :
    - In 'Tier 1' physical modification
    - In 'Tier 2' flood structures, urbanisation (including transport, other, urban development)
- EA flood warning areas : locations within the flood warning service with a community at risk of flooding *see paragraph below*
- Iris Burn Allotment area in the Ouseburn (it was mentioned during the Tyne Catchment Plan consultation work)

However, this is a limited view of the issues. There are three types of flooding – a) coastal (often extreme tides and severe weather); b) river flooding (caused by excessive rainfall over a long period of time, or snow melt); and c) surface flooding (where rain has overwhelmed an urban drainage system or rural hill land is unable to absorb rain water). The maps only show part of the problem – the 'flood warnings' data is only for the 'main river' and not for ordinary watercourses nor for surface water flooding / coastal flooding. It is difficult to 'warn' for surface water flooding.

Therefore, it is noted that this theme / goal is perhaps the one that would really need re-doing.

Possible missing information from the base maps of issues:

We should have added to the EA flood warning areas dataset, the additional :

- 'flood risk areas' for surface water flooding (but not groundwater, coastal, water main, river flooding or reservoir failure)
- also 'flood alert areas' (flooding from main rivers, watercourses and the sea)
- 'Properties in areas at risk – flooding from rivers and sea' (based on 50m cells, each allocated one of 4 risk categories taking into account defences and their condition)

So, in an ideal world, the base map of issues would be regenerated.

The 'existing actions and proposed projects in development' overlay brought in data from :

- Brunton Burn – the current engineering works will bring flood alleviation as well as some habitat improvements
- EA Flood Coastal Risk Management Schemes (reserved funding in 2014/15 and indicative funding in 2015/16) *note – since then the EA has agreed the 6-year programme for flood and coastal risk management, with a set of schemes*
- Gateshead GI
- Haltwhistle Catchment Restoration Project (Ref C13 in Tyne Catchment Plan)
- Haltwhistle & Red Burn (Acomb) (Ref P27 in Tyne Catchment Plan – capturing local knowledge to improve flood modelling, linking to PhD work)
- Ouseburn (Evidence & Measures project)
- Peat Programme
- River Team
- River Don
- Settlements working on flood resilience (Ref C34 in Tyne Catchment Plan – list of current and ongoing settlements from speaking to Lynne Dunleavy).

Possible missing information from the picture of flooding :

Of course the Tyne has a Catchment Flood Management Plan published by the Environmental Agency. In summary the policies are :

- N Tyne and Rede and Derwent and rural Team : reduce current flood risk management actions
- South Tyne, Hexham & Acomb, upper Main Tyne : continue with existing or alternative actions to manage flood risk at the current level
- Lower main Tyne : take action to sustain the current scale of flood risk into the future

In addition, Northumberland County Council have done a number of flood reports since 2012 : www.northumberland.gov.uk/default.aspx?page=16751

- Summer 2012 (in the Tyne are : Acomb, Blenkinsopp, Burnstones, Halton Lea Gate, Haltwhistle, Hexham, Kirkwhelpington, Ovingham, Prudhoe, Slaggyford, West Woodburn)
- and Haltwhistle April 2014

Also the County's Local Flood Risk strategy is also up for consultation (until April 2015) and can be viewed here http://www.northumberland.gov.uk/default.aspx?page=12684 (final version not yet published)

The maps of 'rapid response catchments' would have also been invaluable to include.

Also missing from the map of projects / actions are current farm stewardship schemes that address flooding.

Finally, there will be an updated picture of the projects with indicative funding from the Environment Agency's programme of works.

Main Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Derwent from Nookton Burn to Burnhope Burn (1) – this relates to physical modification and impoundments
- Derwent Reservoir (5) – this relates to physical modification and impoundments
- Derwent from Burnhope Burn to Tyne (4) – this relates to barriers to fish migration, impoundments and physical modification
- Team (16) – this relates to physical modification through urbanisation, flood protection structures
- Don (2) – these both relate to physical modification through flood protection structures

- Main Tyne itself (2) – these both relate to physical modification through urbanisation and the fact that the Mitigation Measures Assessment has not yet been made
- Ouseburn (14) – these relate to physical modification through urbanisation, land drainage, and flood protection structures
- The New Burn (6) – these relate to urbanisation (generally, as well as transport infrastructure)

The 'existing actions and proposed projects in development' overlay shows that :

- There is an issue noted on the main Tyne itself, but no mapped projects or actions to cover that area, apart from possible links to the Gateshead Green Infrastructure strategy
- There is an issue noted for the New Burn area, but no mapped projects or actions to cover that area. The Partnership noted this during their discussions as an area to focus on in the future. It is partly culverted (2 culverts), there are housing plans here, plus surface water is a known issue (yet not on the maps available to the meeting).
- Any of the North Pennines AONB Partnership's peatland work in the upper Derwent (Blanchland, Edmundbyers area) could have an impact on the Derwent waterbodies with flooding issues
- There are communities in the Tyne Valley working on flood resilience which correlate well with the flood warning areas. There is a group at Blackhall Mill which has not been mapped. Also, in Gateshead there are 'resilience' volunteers, with a role similar to flood wardens
- The Brunton Park scheme (joint project between Environment Agency, Northumbrian Water and Northumberland County Council) will address some flooding problems in a specific part of the Ouseburn waterbody
- There is a SUDS for Schools project in Fellgate (part of the Don catchment) where more than 300 properties are at risk. The group also added 'Norwood Nature Park – SUDS' to the map

North Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Scaup Burn from Source to N Tyne (8) – these all relate to barriers to fish migration
- N Tyne from Source to Ridge End Burn (7) – these all relate to impoundments
- Ridge End Burn (6) – these all relate to impoundments
- Deadwater Burn (3) – these all relate to impoundments
- Lewis Burn from Source to Akenshaw (2) – these both relate to barriers to fish migration
- Akenshaw Burn from Source to Lewis Burn (2) – these both relate to barriers to fish migration

- N Tyne to Lewis Burn (5) – these related to barriers to fish migration as well as impoundments
- Plashett's Burn (3) – these all relate to impoundments
- Kielder Water (2) – these both relate to impoundments
- Little Wickhope Burn to Binky Burn (2)
- Chirdon Burn (1) – this is physical modification in relation to forestry land use
- Houxty Burn from Source to Fletchlaw Burn (1) - this is physical modification in relation to forestry land use
- Fletchlaw Burn (1) - this is physical modification in relation to forestry land use
- Wark's Burn from Source to Middle Burn (1) – this is physical modification in relation to forestry land use
- Middle Burn (1) - this is physical modification in relation to forestry land use
- Hareshaw Burn (3) – these are in relation to urbanisation - other
- Colt Crag Reservoir (4) – these are in relation to impoundments
- Hallington Reservoirs (2) these are in relation to impoundments

The 'existing actions and proposed projects in development' overlay shows that :

- The Hareshaw Burn is the only waterbody in this area that is affected by urbanisation rather than forestry or impoundments. There are 5 weirs downstream of the Hareshaw Linn, but some of them are listed structures. This issue is clearly independent of any peat work done in the very upper catchment.
- There appear to be communities in this area with Flood Warning Areas but who (to date) aren't working on Flood Resilience e.g. Bellingham, Falstone, W Woodburn, Otterburn, Barrasford, Low Brunton). However, they may be programmed in. Also, working on flood resilience as a community also depends on a community response. Add more here
- The detail behind the spreadsheet of the Waterbody Action Plan concludes that in places a fish pass is unfeasible (e.g. Akenshaw Burn, Catcleugh Reservoir, Lewis Burn) and some of these waterbodies had therefore been re-categorised as 'good'. In some ways this topic is actually showing up lots of issues relating to fish (which is goal A5, below) or forestry (which, within a 'forest cycle' can be addressed by the Forest Streams project) rather than flooding.

South Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Nent from Source to S Tyne (3) – the issues here relate to urbanisation, specifically the hydropower workings
- Carr's Burn (3) – the issue here relates to barriers to fish migration with weir removal being the required action

- Greenlee Lough (1) – the issue here relates to impoundments, specifically agricultural practices around the lough (rather than flooding directly)

The 'existing actions and proposed projects in development' overlay shows that :

- The Tyne Catchment Partnership also made notes on this map, adding that some flooding issues are missing from the base map (around Featherstone and Halton Lea Gate), that Haydon Bridge community is working on flood resilience, and that Haltwhistle Burn is a rapid response catchment
- The other noted issues in this part of the Tyne

Goal A4 – Fishery

The 'issues' basemap brought in data from :

- From the WFD 'Reasons for Failure' / The Tyne Waterbody Actions Plans : shaded waterbodies where they have :
    - Failing Element : fish
    - Tier 1 : flow or physical modification
    - Tier 2 : barriers to fish migration or impoundments
- EA monitoring points for fish or flow
- Obstructions :
    - In-river obstructions mapped for the Tyne Catchment Plan in 2012
    - Man-made and natural obstructions from the EA
    - TRT known obstructions in 2014

The 'existing actions and proposed projects in development' overlay brought in data from :

- Fish passes : Planned pass locations, Currently being tackled / ongoing fish pass locations & Recently completed fish pass locations)
- Derwent Reservoir & waterbodies downstream
- Gateshead GI
- Landscape Partnership Schemes (Land of Oak & Iron LPS, Allen Valleys LPS, Rede HLF bid)
- Planned eel pass sites (in EA medium term plan)

Main Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Ham Burn (2)
- Rowley Burn (2)

- Devil's Water (2)
- Derwent from Nookton Burn to Burnhope Burn (1) – this relates to impoundments
- Derwent Reservoir (5) – these relate to impoundments
- Derwent from Burnhope Burn to Tyne (10) – these relate to barriers to fish migration
- Team (16)
- Don (2)
- Main Tyne itself (2)
- New Burn (6)
- Ouseburn (32)

The 'existing actions and proposed projects in development' overlay shows that :

- The Ouseburn Evidence & Measures project may help tackle the issues in this waterbody
- The Don and the Team have noted issues in relation to fish, but no current projects addressing these. Apart from proposed Eel passes on a series of weirs downstream of Urpeth Bridge and any potential actions from the Gateshead Green Infrastructure Strategy.
- The Land of Oak and Iron proposed Landscape Partnership Scheme covers the whole Derwent from Burnhope Burn to Tyne waterbody (and more) add more here. As part of the scheme a fish pass at Linzford is proposed.
- As a general point, it should be noted that some of the fish obstructions in the urban area are not well recorded / surveyed – so additional on-the-ground information is needed in places
-

North Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Catcleugh Reservoir (1) – relating to impoundments
- Blakehope Burn (4) – relating both to forestry and barriers to fish migration
- Scaup Burn (8) – relating to barriers to fish migration
- N Tyne from Source to Ridge End Burn (7) – relating to impoundments
- Ridge End Burn (6) – relating to impoundments
- Deadwater Burn (9) – relating to forestry and impoundments
- Plashett's Burn (3) – relating to impoundments
- N Tyne from River North Tyne to Lewis Burn (5) – relating to barriers to fish migration and impoundments
- Lewis Burn from Source to Akenshaw Burn 4) – relating to barriers to fish migration and forestry
- Akenshaw Burn from Source to Lewis Burn (4) – relating to barriers to fish migration and probable 'natural mineralisation'

- Lewis Burn from Akenshaw to N Tyne (9) – relating to forestry and barriers to fish migration
- Cranecleugh Burn (2) – both relating to forestry
- Little Wickhope Burn to Binky Burn (2) – both relating to impoundments
- Chirdon Burn (1) – relating to forestry and the Mitigation Measures Assessment
- Houxty Burn from Source to Fletchlaw Burn (1) - relating to forestry and the Mitigation Measures Assessment
- Fletchlaw Burn (1) - relating to forestry and the Mitigation Measures Assessment
- Wark's Burn from Source to Middle Burn (1) - relating to forestry and the Mitigation Measures Assessment
- Middle Burn (1) - relating to forestry and the Mitigation Measures Assessment
- Hareshaw Burn (3) – relating to urbanisation
- Colt Crag Reservoir (4) – relating to impoundments
- Hallington Reservoirs (2) – relating to impoundments

The 'existing actions and proposed projects in development' overlay shows that :

- The proposed HLF Landscape Partnership Scheme project may help with fishery problems in Catcleugh reservoir and Blakehope Burn (but the other waterbodies are not in Redesdale)
- There are no projects tackling fish issues at Colt Crag Reservoir or Hallington Reservoirs, which are relating to impoundments. The detail behind the WAP is awaiting confirmation
- There are no projects tackling fish issues at Hareshaw Burn. There are 5 weirs downstream of the Hareshaw Linn, but some of them are listed structures. This is outside of the Redesdale Landscape Partnership Scheme area.
- There are no projects tackling the logged fish issues to the NW / W / S of Kielder (the bulk of the waterbodies listed) add more – apart from a planned fish pass / easement at the Smales Burn ford (although the Smales Burn itself is not one of the waterbodies highlighted in the WAP as having a fish issue). Although the Forest Streams project helps tackle the waterbodies in this area with an aim to improving the environment for fish (*in hindsight this should have been included in the 'current actions and projects' overlay)*
- Looking at the detail in the WAP, clearly there are locations where fish passes have been considered, but rejected as unfeasible.
- Fish Pass work has recently taken place on the Otter Burn and are planned at E Woodburn (Lisles Burn ford) and at Gunnerton Burn. Also, there is a proposed Eel pass on the Rede just E of Bellingham. All these locations may ease the pressures upstream.
- In the very long term, is a fish pass on Kielder Dam feasible?

South Tyne

Waterbodies that have multiple Reasons for Not Attaining Good status under these theme (with counts) :

- Nent from Source to S Tyne (5) – these relate to abandoned mines as well as the Mitigation Measures Assesment
- Wellhope Burn (4) – these relate to abandoned mines
- W Allen from Wellhope Burn to Allen (3) – these relate to abandoned mines
- Carr's Burn (4) – these relate to barriers to fish migration as well as abandoned mine issues
- Allen from W Allen to S Tyne (2) – these both relate to fish being a failing element
- Technically the Haltwhistle Burn should also appear on the map relating to fish but the data isn't there

The 'existing actions and proposed projects in development' overlay shows that :

- All the waterbodies listed above (apart from the Nent) fall within the Allen Valleys proposed Landscape Partnership Scheme project area. This will help with locations where fish is a failing element because of abandoned mines e.g. through sediment / erosion works
- The Partnership noted that a lot of failures are linked to man-made and natural structures. The Partnership discussed 2 man-made structures in this area (there are more on the base map) which may need programming, as well as other issues on the maps which need further information. (*Note summer 2015: This topic could do with a more detailed / updated overview for the whole catchment*). The classification doesn't always reflect natural conditions. Note – the EA can't fund a fish pass on a natural obstruction.

Conclusions

On the topic of pollution, there are lots of initiatives working in the urban area, which need co-ordination. Potential 'gaps' in the coverage of projects were Newburn (urbanisation issues); March Burn (phosphate); Derwent Reservoir (phosphorous related problems, linked to impoundments); Colt Crag reservoir, Hallington Reservoir, sediment monitoring at 3 loughs on the Roman Wall. Elsewhere, some initiatives are taking place where the base map hadn't noted any issues.

On the topic of mines / minerals, many organisations are working together and programming activity. The link between mines / minewaters and calaminarian grasslands (and linking to the wider Tyne Sediments Plan) might be a good Partnership project for further detailed thought, to see if there are still 'gaps' to address or timescales to plan for.

On the topic of river habitat & invasives, potential 'gaps' in the coverage of projects include the mismatch between river watch groups / where volunteers are based and the best

locations to tackle invasive species. More specifically, at Colt Crag Reservoir and Hallington Reservoirs, there appears to be a problem but no planned solution.

On the topic of flooding, a potential 'gap' includes New Burn (surface water flooding). Generally, however, this set of maps would need refreshing. There are many organisations and communities working together on the flooding or flood resilience topic and the data would need regenerating.

Finally, on the topic of fishery resource, potential gaps include the River Don and the River Team as well as better recording of fish obstructions in urban areas. Again, Colt Crag Reservoir and Hallington Reservoir appeared as a gap in this topic. A closer look at the Kielder area waterbodies and the South Tyne obstructions may be needed to ensure that all feasible locations for fish passes or easements are programmed in.