



**Walkover Report
Harsondale Burn
(River Tyne Catchment)
15/02/2017**



Undertaken by Gareth Pedley, Wild Trout Trust

Key findings

- The lower end of the burn (towards the confluence with the River Allen) provides some potential for resident trout populations but the limited passability of many sections and rugged nature of the substrate make the burn more suited to larger migratory salmonids, providing they can gain access. All of the obstructions on the burn are natural/semi-natural (allowing that coniferous input may worsen the impact of blockages compared to natural deciduous woodland), so the general consensus would be to leave those aspects in their natural/semi-natural state. The presence of that woody material in the channel is helping to retain gravel and cobble substrate that will certainly provide other improvements to fish and invertebrate habitat.
- Addressing the fine sediment inputs to the burn should be seen as a priority and investigating the source (somewhere u/s of Carts Bog Inn) will be required in order to do that. However, it is likely that the issues arise from ditch maintenance, which is a perfectly legal activity. Unfortunately, the fine sediment pollution it causes is not, although a blind eye is often turned to it.
- The high nutrient input occurring near Carts Bog Inn (further site inspection and discussion with the owner/tenant required) should be addressed. This again is a pollution and the issue should be rectified as soon as possible.

1.0 Introduction

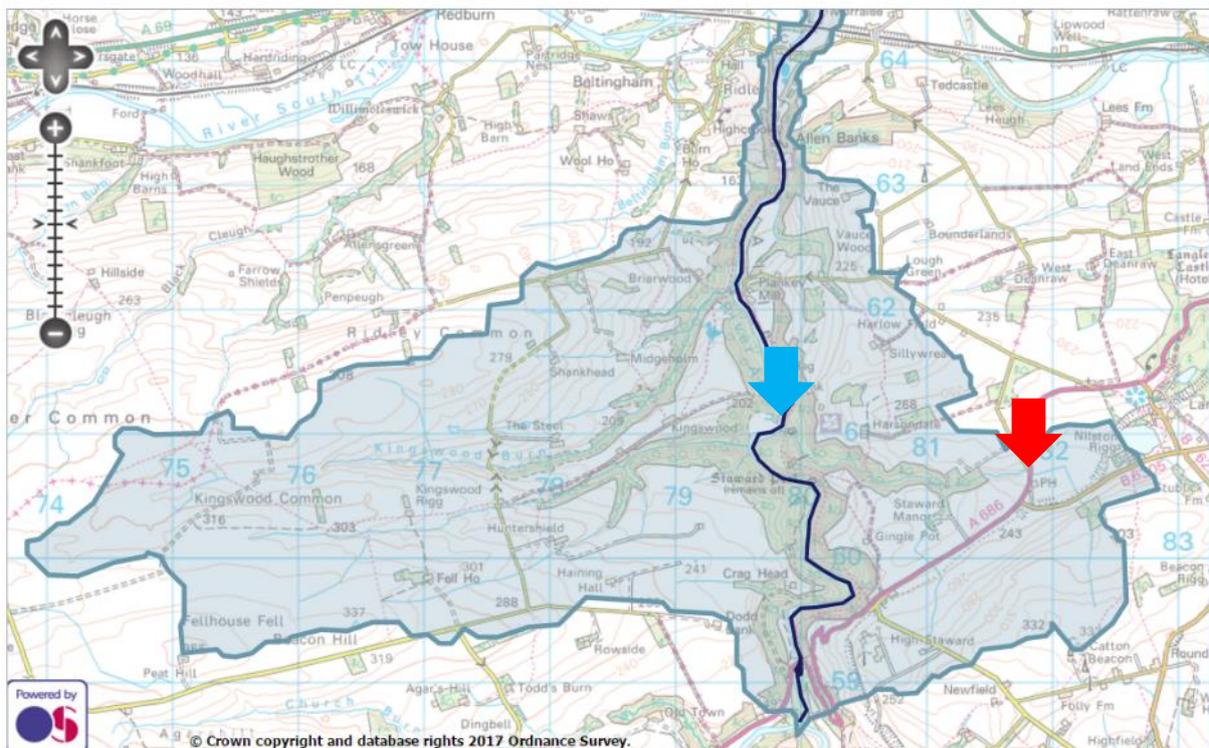
This report is the output of a site visit to the Harsondale Burn by Gareth Pedley of the Wild Trout Trust (WTT). This work was initiated as part of the Tyne Tributaries Project: a collaboration between the Tyne Riparian Owners Association (TROOA), the Tyne Rivers Trust (TRT) and the Environment Agency (EA). Also present on the walkover were Norman Hooks and Ray Bell (TRT volunteers). The walkover assessment was undertaken from the Carts Bog Inn, working downstream to the River Allen. The report pictorially illustrates the habitat assessment, with captions highlighting the issues in each photo.

Normal convention is applied throughout this report with respect to bank identification, i.e. the banks are designated left bank (LB) or right bank (RB) whilst looking downstream. The Ordnance Survey National Grid Reference system is used for identifying any specific locations. Upstream and downstream references are often abbreviated to u/s and d/s, respectively.

Harsondale Burn lies within the River Allen catchment Water Framework Directive Waterbody ID GB103023074700.

Northumbria ▶ Tyne ▶ Allen ▶ Allen from West Allen to South Tyne

Allen from West Allen to South Tyne



Overview of the upstream (red arrow) and downstream (blue arrow) limit of the Harsondale Burn catchment walked (taken from the Environment Agency Catchment Data Explorer).

2.0 Habitat Assessment



Photo DSCN5894. The upstream extent of the walkover. Here, the channel u/s extends into the distance as a straightened ditch, flowing through reasonably lightly grazed land; however the grazing is preventing re-colonisation by herbaceous vegetation and shrubs. The confluence with a small tributary, which flows past the Carts Bog Inn, can be seen in the foreground.



Photo DSCN5899. The tributary flowing past Carts Bog Inn exhibits signs of particularly high nutrient and sewage fungus, indicative of a likely septic tank issue from the inn (NY 81839 60677).



Photo DSCN5895. The A686 road culvert poses no real issues for fish passage or sediment transport (except possibly at very high flows through fluming) but the slightly wider channel in that area clearly demonstrates excess fine sediment issues. Ditch dredging/maintenance u/s is a likely cause.



Photo DSCN5906. Grazing intensity, and its impact, increase in the field d/s of A686 road, exacerbating bank erosion and adding to the fine sediment problems.



Photo DSCN5907. The nutrient issues emanating from the tributary u/s remain evident for some distance (photo taken 200m d/s of the confluence). Note the trailing, slimy biofilm.



Photo DSCN5911. The increased biofilm on the in-channel vegetation and substrate also traps fine sediment, highlighting the over-supply.



Photo DSCN5908. A small pipe enclosed the burn at a crossing point but poses no major impediment to fish or sediment movement.



Photo DSCN5910. Stone turning revealed excessive numbers of black flies (*Simulium* sp.) and a general absence of the ephemeroptera and trichoptera that would be expected in a tributary of this order and location. An overabundance of simuliids is also indicative of excess sediment and pollution/nutrients.



Photo DSCN5912. A bare bank face exposes mine spoil and clear signs of past mining activity in the area. The poor growing media limits root penetration into the ground and the topsoil protection root matrices provide, making the turf susceptible to slippage. This is particularly problematic where sheep tracks compromise the integrity of the sward.



Photo DSCN5922. at the d/s extent of the field, the burn enters a steep section of woodland (initially coniferous).



Photo DSCN5916. Water containing high levels of iron was observed to be seeping out of the bank in several locations throughout the woodland, where upon contact with the oxygenated water at the surface it oxidises, precipitating out of solution to leave an ochreous residue. This process also causes flocculation of very fine particles from suspension in the water, creating further coating of the bed with fine sediment; however, the mine water itself is not considered to be in great enough volumes to be causing a major issue (water sampling could clarify this).



Photo DSCN5926. The steep and bedrocky nature of the valley creates numerous obstructions to fish passage. A bedrock ledge at NY 81255 60589 creates a complete barrier at low-medium flows.



Photo DSCN5927. Shading from the coniferous canopy limits the extent of ground cover from vegetation and the shallow roots of the trees are susceptible to undercutting. Which creating some increase to the fine sediment loading of the burn, this erosion does allow habitat features to develop, like meanders and undercuts, and provides a source of woody material to the channel.



Photo DSCN5931. A further major bedrock obstruction was observed at NY 81132 60571.



Photo DSCN5941. With the input of large trees and woody material also comes some potential issues, with blockages being created that impede fish passage. This issue of complete blockages occurring tends to be worse (less natural) with long, straight conifers (with areas of dense side branches), rather than naturally complex deciduous branches/trunks. Benefit is derived from the gravel and cobble (potential spawning) substrate they retain, but deciduous woody material usually achieves these benefits with less chance of complete blockage.



Photo DSCN5942. Some of the pools do naturally retain potential salmonid spawning substrate but its viability for that use and invertebrate habitat remains greatly compromised by fine sediment.



Photo DSCN5977. Several major >1500mm high (near complete) obstructions were noted throughout the middle and lower burn, particularly in the gorgy sections, where this would be more natural occurrence, irrespective of the constituent material. Valuable coarse substrate is retained by them which will benefit invertebrates and resident trout (if present) but some may obstruct migratory salmonid access at certain flows.



Photo DSCN5985. Natural, large boulder cascades also inhibit fish passage but are natural features of the rugged gorge.



Photo DSCN5990. Towards the d/s end of the burn the channel begins to reduce in gradient, naturally retaining more gravel and cobble sediment and creating greater opportunities for salmonid spawning (fine sediment still an issue). Deciduous trees and a wider valley profile (mini-floodplain) further assist the retention of gravels and naturally enhance the habitat provided.



Photo DSCN6008. Although not part of the walkover, a section of the River Allen was walked at Plankey Mill to get back to the vehicle. Here the farming practice is very poor, with heavily overgrazed and poached banks, exacerbated by a feed ring being located on the bank, immediately adjacent to the river (NY 79614 61994).



Photo DSCN6005. Grazing of the banks, in conjunction with past straightening and channel incision is also jeopardising the bankside alder trees (*Alnus glutinosa*). Ironically, this erosion and increase to channelled sinuosity that will almost certainly result will be an improvement to the morphology of the river, although it is highly unlikely that that the tenant, who is contributing to the problem, will agree.



Photo DSCN66002. On the same section of bank, evidence of what appears to be the direct discharge of slurry/farmyard waste to the watercourse, down the river bank, was observed. If this is the case it would constitute a pollution event and is highly illegal

3.0 Recommendations

Issue	Proposed action	Photos	Priority (1-3)
Fine sediment inputs u/s of the walkover section / u/s of Carts Bog Inn (NY 81842 60603).	Undertake further investigation of the sources. If ditch dredging, enter discussion with landowner/tenant about ways to limit the impact (work in the dry/work at very low flow when sediment can be controlled, avoid fish spawning period, only undertake work if absolutely necessary).	DSCN5899 & DSCN5907	1
High nutrient levels/sewage fungus in tributary (NY 81839 60677).	The pub is the only likely source so discussion with the owners/tenants about the issue would be beneficial. If no improvement, report to EA.	DSCN5899	1
Livestock access to burn and erosion (NY 81818 60694 - NY 81456 60673).	Buffer fencing to exclude livestock.	DSCN5906	2
River Allen			
Severe livestock poaching and feed ring adjacent to watercourse (NY 79614 61994).	Undertake farm advisory visit to discuss the issues highlighted. Remediation would include buffer fencing and better general farm management. As a minimum, the feed ring should be relocated away from watercourse.	DSCN6008	1
Suspected slurry/yard waste discharge direct to watercourse (NY 79586 62021).		DSCN66002	1

4.0 Further assistance

The Tyne Tributaries Walkovers were initiated to identify the range and location of issues impacting upon selected underperforming watercourses within the River Tyne catchment. The accompanying reports highlight potential solutions to the issues encountered and provide the supporting evidence for future projects and funding bids.

Further to the walkover reports, the WTT can undertake specific Project Proposals for the more complex issues highlighted, detailing exactly what is required and how the work can be undertaken. Project Proposals then often form the supporting documentation for any EPR applications and consents that may be required.

The WTT website library has a wide range of free materials in video and PDF format on habitat management and improvement:

www.wildtrout.org/content/index

We have also produced a 70 minute DVD called 'Rivers: Working for Wild Trout' which graphically illustrates the challenges of managing river habitat for wild trout, with examples of good and poor habitat and practical demonstrations of habitat improvement. Additional sections of film cover key topics in greater depth, such as woody debris, enhancing fish stocks and managing invasive species.

The DVD is available to buy for £10.00 from our website shop <http://www.wildtrout.org/product/rivers-working-wild-trout-dvd-0> or by calling the WTT office on 02392 570985.

5.0 Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for supporting the Tyne Tributaries Project through their Fisheries Improvement Programme (funded through rod licence income), and the Tyne Rivers Trust for their support with the work, for obtaining permissions and for organising volunteer assistance where required. We would also like to thank the Tyne Riparian Owners and Occupiers Association for initiating the project and the volunteers that assisted with the walkovers for providing their time.

6.0 Disclaimer

This report is produced for guidance; no liability or responsibility for any loss or damage can be accepted by the Wild Trout Trust as a result of any other person, company or organisation acting, or refraining from acting, upon guidance made in this report.