WILD TROUT TRUST

River Dane, Cheshire/Staffordshire

River Weaver Catchment, North West River Basin District

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Author: Tim Jacklin (tjacklin@wildtrout.org tel. 07876 525457)

Contents

Key Findings

- Trout habitat is generally very good on the sections of the Dane inspected.
- Land use alongside the river is woodland and low-intensity grazing, presenting few problems for the habitat of the river and riparian zone.
- Water quality appears to be good given the presence of pollution-sensitive invertebrates.
- Large woody structures are present and provide excellent habitat but are less frequent than might be expected in a wooded valley, possibly because of the flashy nature of the river.
- Invasive species are present in the form of signal crayfish and Himalayan balsam; the club control the latter through hand pulling.

1. Introduction

The Wild Trout Trust (WTT) was approached by Macclesfield Flyfishers Club (MFC) for an advisory visit on the River Dane. The visit was undertaken by Tim Jacklin on 23rd June 2025 accompanied by a long-standing member of MFC with extensive experience of the Dane fishery. The Club has several miles of fishing on the upper Dane, but this visit was restricted to two beats, Bartomley Bottoms (¾ mile) and Back Dane (4 miles).

Specific locations are identified using decimal latitude and longitude (e.g. 53.183574,-2.0532471), which can be pasted straight into online mapping tools to identify locations. Figure references within the text of the report are hyperlinked (green font), so holding Ctrl and left-clicking on them will move to that point within the document. Left bank (LB) and right bank (RB) of the river are described when looking downstream.

2. Background

The River Dane rises on Axe Edge in the Peak District National Park near Buxton and flows westwards to join the River Weaver near Northwich, Cheshire, and ultimately the tidal River Mersey. The sections inspected during this visit are located in the upper reaches of the Dane between Gradbach and Danebridge.

The Environment Agency (EA) measure the quality of rivers under the Water Framework Directive (WFD) classification system. River catchments are divided into geographical units (waterbodies) and a range of parameters (ecological, chemical and physical) are assessed to provide an overall status. The ecological parameters are ranked as *High, Good, Moderate, Poor* or *Bad* and in general, the overall status of the waterbody is determined by the lowest scoring individual parameter.

The sections of the Dane inspected during this visit span two waterbodies: Dane (Clough Brook to Cow Brook, GB112068060180) and Dane (Source to Clough Brook, GB112068060230). The overall status of the former is *poor*, driven by a *poor* status for fish, whilst the overall status of the latter is *good.* [Note the failures for priority hazardous substances, such as polybrominated diphenyl ethers, so-called 'forever chemicals' are common to almost every waterbody].

Details of sampling points and the data collected which contribute to the above assessments can be found on the EA's Ecology & Fish Data Explorer.

MFC operate a wild brown trout fishery on the upper Dane with no stocking of fish, mandatory catch-and-release and barbless hooks. Catch returns are completed by members but were not available at the time of compiling this report. Discussions with the accompanying MFC member, who has fished the river for two decades, indicate a decline in catch rate by around 50% in recent years. This may reflect a decline in abundance of fish but must be treated with caution as a single angler's experience – pooled catch and effort data from all members would provide more confidence in making an assessment.

Non-native signal crayfish (*Pacifastacus leniusculus*) were observed during the visit and have been present in the Dane for many years.

3. Habitat Assessment

This part of the Dane has an upland character, flowing off the sandstones and gritstones of the south-western Peak District's moors and falling c.150m in c.6.5km between Three Shires Head and Danebridge. The river flows through a steep-sided valley (and in places rock gorges – cover picture), a fair proportion of which is wooded (Figure 1).

The presence of woodland on the valley sides provides multiple benefits for the river including:

- Shading, which moderates water temperatures during hot weather. More exposed streams, particularly those with a surface-water hydrology and a stony bed like the Dane, can reach lethal temperatures for trout without adequate tree cover.
- Input of leaf litter which supports a range of aquatic invertebrates preyed upon by trout and other species; also, inputs of terrestrial invertebrates eaten by trout.
- A dynamic source of large woody material (LWM) to the river channel in the form of fallen trees and branches.
- Moderates the hydrology of the river – trees greatly increase infiltration of rainwater to the soil which can help reduce flood peaks and support flows during dry weather.

Large woody material (Figure 2) is very valuable habitat within the river. It provides refuge areas for fish from predators, for example fish-eating birds such as goosander which are frequently observed here. LWM also traps leaf litter, making it available to aquatic invertebrates (trout food). Larger pieces of wood influence the shape of the channel by causing localised scour and deposition of sediments; this creates habitat niches, for example well-sorted gravels for fish spawning.

The occurrence of LWM was less frequent than might be expected given the extent of woodland along the river. MFC do not remove LWM which is a wise policy given the above benefits, so the relative lack may be down to the size and frequency of flood flows washing LWM away. The 'flashiness' of flows may be influenced by the moorland catchment upstream; moor restoration projects like Moors for the Future are working to restore bog and clough habitats which help to moderate flows, but do not appear to have worked in the upper Dane catchment.

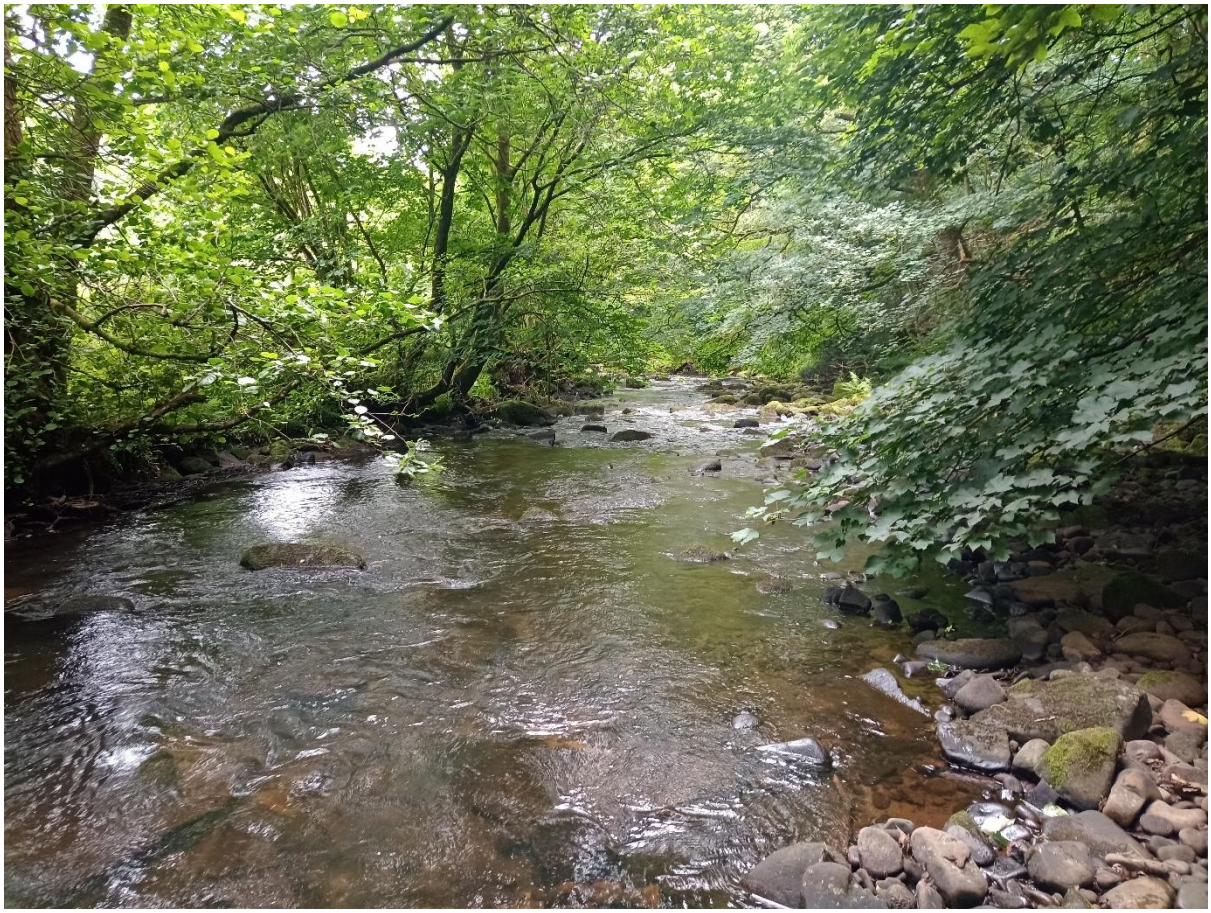

Figure 1 Typical section of Bartomley Bottoms beat. Tree shading such as this is very valuable for maintaining cool water temperatures during hot weather, particularly on stony-bedded rivers like the upper Dane.

The geology and hydrology of the upper catchment is reflected in the composition of the river bed, with sediment sizes ranging from large boulders down to sand, with a large proportion of cobble and large gravel deposited in side bars. There is evidently a dynamic sediment supply and regular flows sufficient to transport particles up to cobble size. The larger and more stable boulders provide good habitat niches for trout, particularly for juveniles in the shallower reaches.

Figure 2 Fallen wood in the channel is extremely valuable habitat and provides multiple benefits. Note also the variety of sediment sizes present.

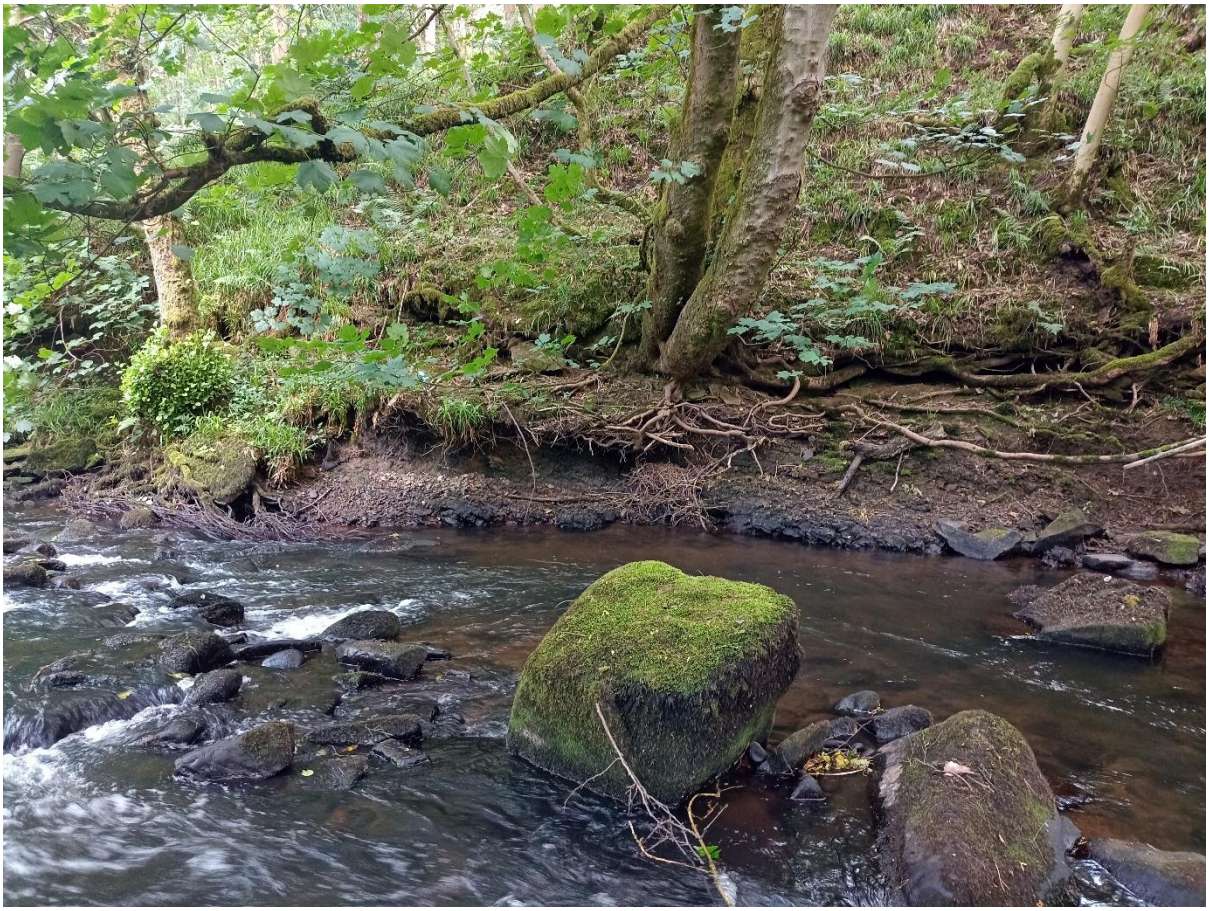

Figure 3 A seam of gravel in an eroding bank provides a good source of material of a suitable size for trout spawning.

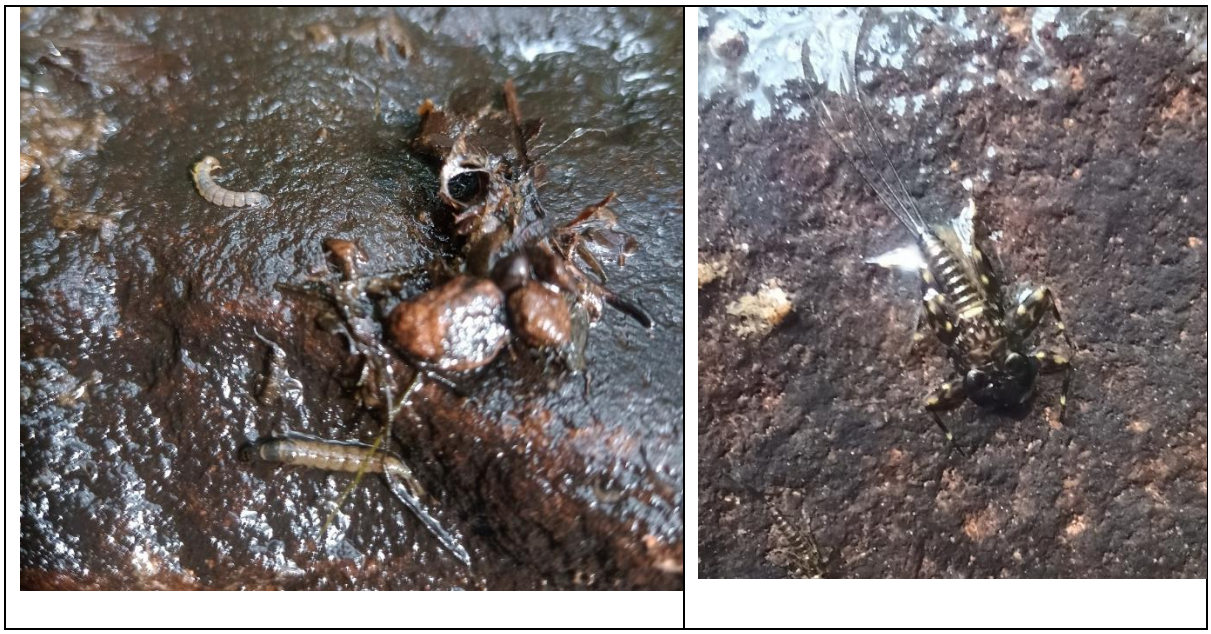

Figure 4 Caseless caddis (Hydropsyche sp.*), left, and flat-bodied mayfly nymph, right.*

Stone-turning revealed some pollution-sensitive invertebrates which is a

positive sign of good water quality. The taxa observed included flat-bodied mayfly nymphs, stoneflies and caseless caddis (Figure 4).

Himalayan balsam was noted throughout the reaches inspected. This non-native invasive annual plant species out-competes native vegetation to the detriment of plant diversity, bank stability and invertebrate diversity and abundance. MFC are aware of the issues and undertake working parties to control balsam by hand-pulling prior to it seeding. This appears to be having a positive effect in that the number of plants observed was relatively low alongside the river; however, there were some denser stands seen in some locations which should be tackled to limit their spread (Figure 5).

Figure 5 (53.186909,-2.054488) A dense stand of Himalayan balsam in the woods alongside the river.

Some long sections of the river channel were very straight (Figure 6), quite uniform in width and lacking deeper pools. Whilst this habitat is good for juvenile trout, it is limiting for larger adult fish. The straightness may be a natural phenomenon in this upland, steep-sided valley but could possibly be a legacy of channel modification. The deeper pool areas observed were on bends in the channel or associated with bedrock/boulder cascades.

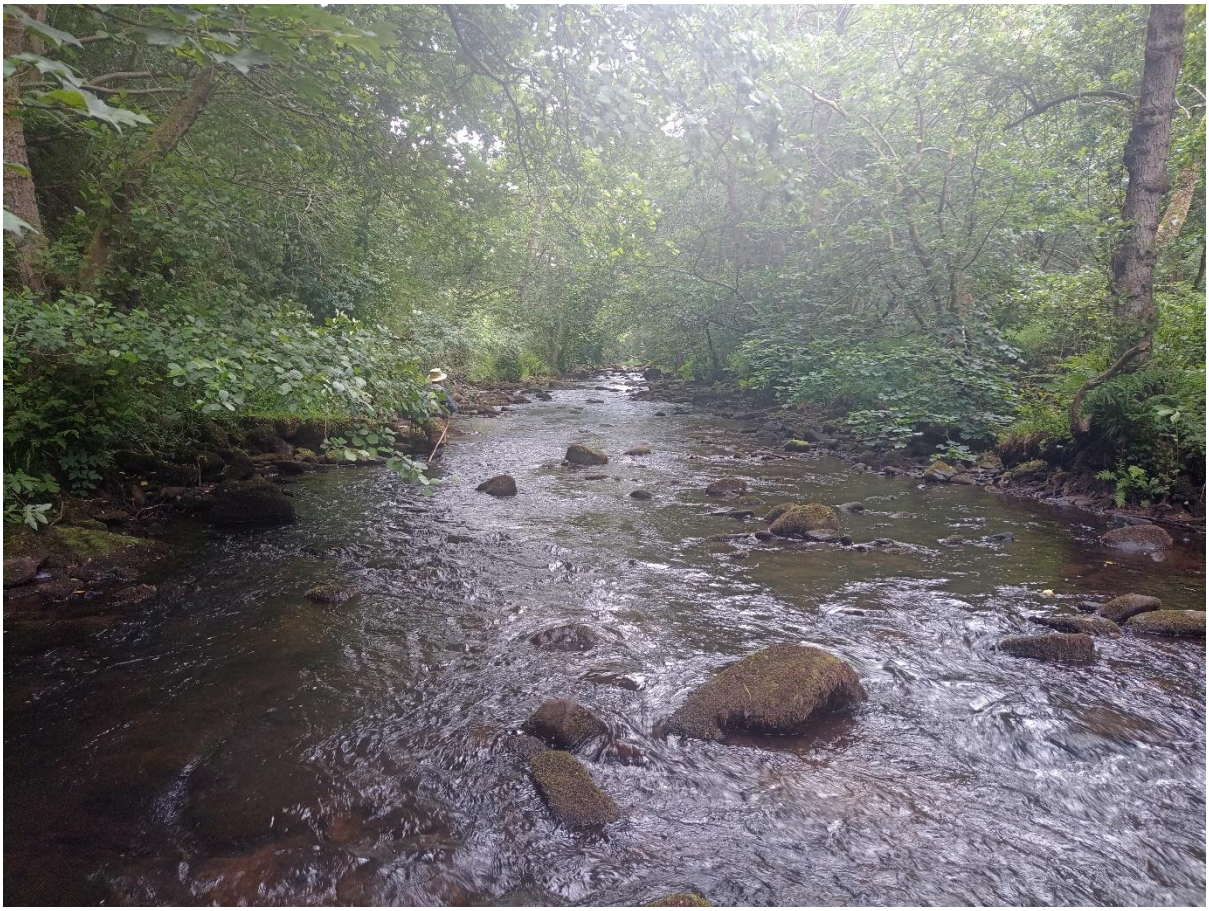

Figure 6 (53.188557,-2.05181) Some sections of the river channel are very straight, which limits the potential for the formation of deeper pools (which occur on bends) more suited to larger adult trout. The straightness may be a natural phenomenon in such an upland, steep-sided valley but a large proportion of UK rivers have a history of channel modification (for example for agricultural improvement, milling, etc.) with little remaining evidence other than the homogenous channel form.

Where the valley sides were not wooded, land use alongside the river was generally low-intensity grazing on valley-bottom meadows (Figure 7). Livestock was largely fenced out of the river with occasional access points for watering. Inevitably these areas were a focus for trampling and faecal inputs, but the observed impact was very minor. One area would benefit from the reinstatement of a barbed wire barrier to prevent cattle accessing the far bank (Figure 8). The weather had been very dry at the time of the visit and observation during wet weather is recommended to assess the impacts of these and other areas for fine sediment, etc. inputs (Figure 9).

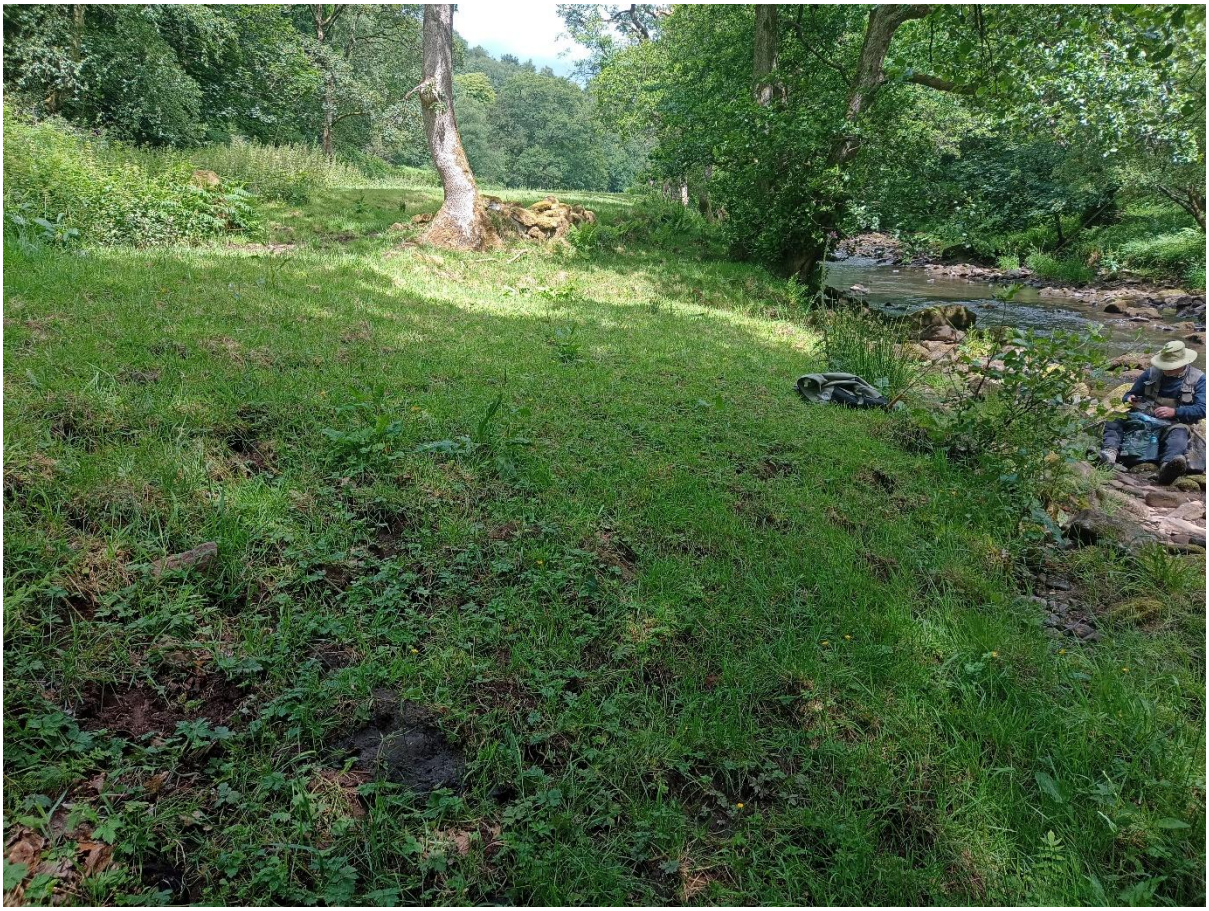

Figure 7 In less wooded areas, land use alongside the river was low intensity grazing, with access to the river for livestock watering restricted to short sections.

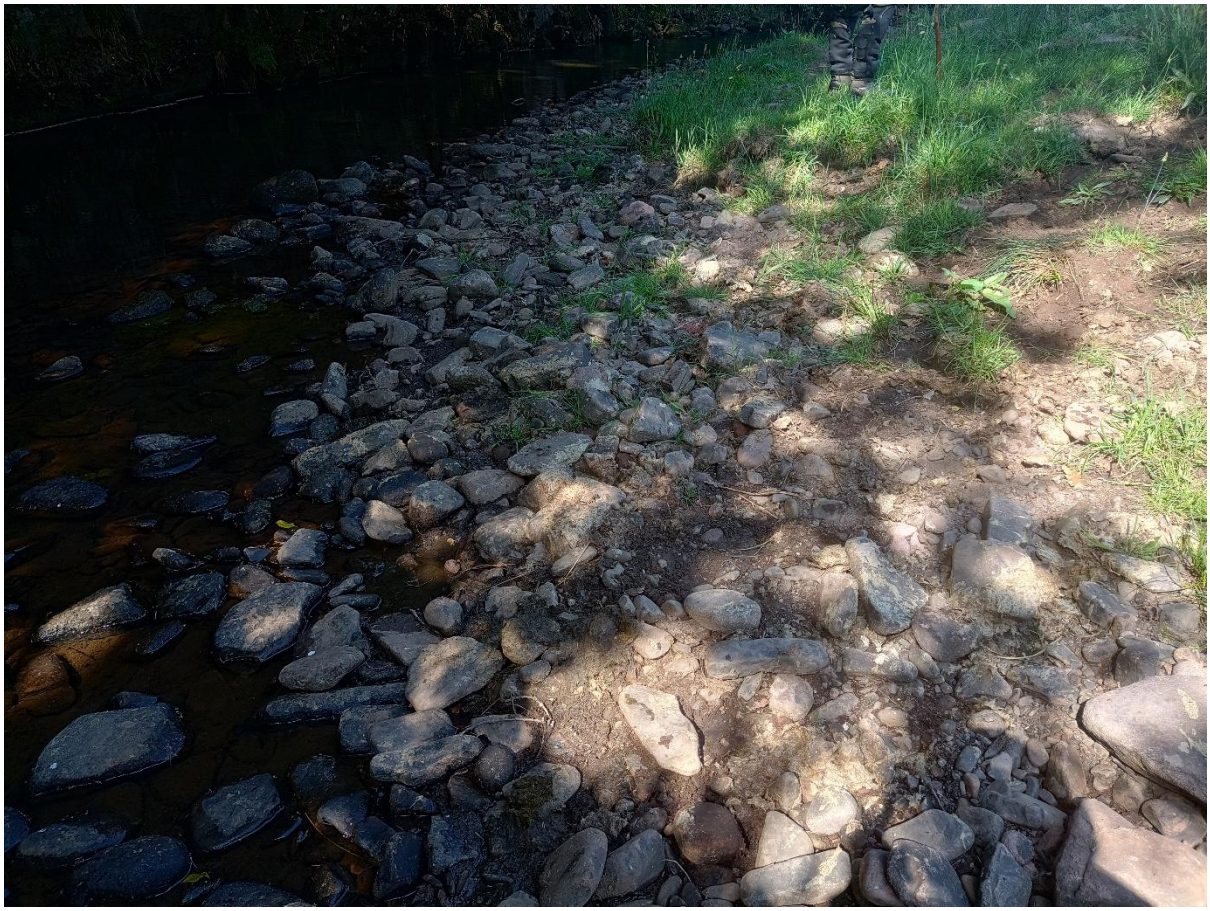

Figure 8 (53.194015,-2.033997) A point bar ("beach") used by cattle for drinking. This area had previously been corralled by barbed wire to limit livestock access, but the barrier has been partially washed out and cattle were accessing the far bank. The barbed wire should be reinstated.

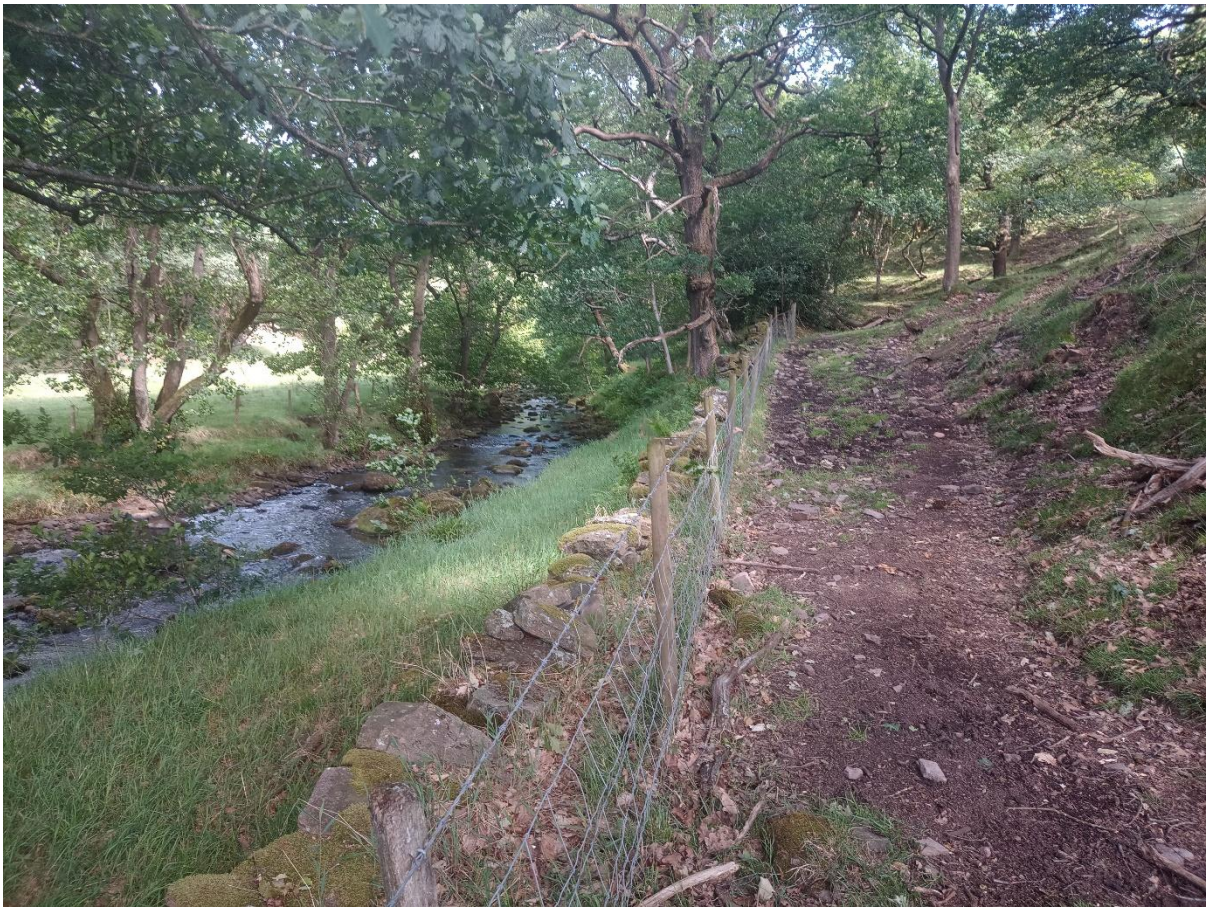

Figure 9 In some areas, livestock desire lines and/or footpath traffic create a potential source of fine sediment, but in general there was a reasonable buffer alongside the river. Observation during wet weather is recommended to find potential preferential runoff pathways.

Closer to the upstream access point at Gradbach, MFC has undertaken some vegetation clearance to facilitate angling access. It is important to strike a balance between access and habitat when undertaking such works. Hinging of trees/branches into the river is often a good way to achieve both objectives.

4. Recommendations

- Retain fallen trees and branches within the channel.

- Control Himalayan balsam by hand-pulling plants before they flower and set seed.

- If undertaking works to improve angling access, retain as much fish cover as possible by using techniques like hinging (Figure 10).

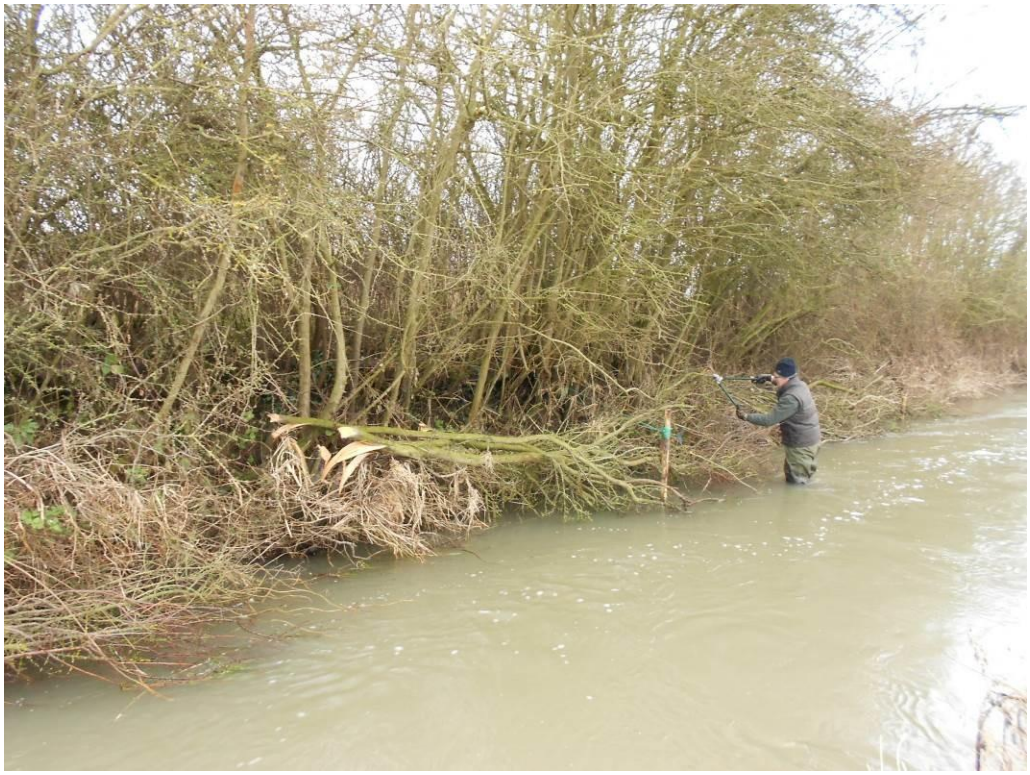

Figure 10 Hinging marginal trees

- Analyse catch return data to spot trends in fish abundance. WTT are happy to do this and update this report.

5. Further assistance

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/wtt-publications

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 large woody structure, enhancing fish populations and managing invasive species.

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

An important source of income which helps to fund the WTT's work is our Annual Spring Auction. The auction is our biggest fundraising event and includes fishing days, tackle, books, art and more. Many of the recipients of our advisory and practical visits subsequently help us by providing auction lots each year, and we're very grateful for this extra support. To donate a lot, please contact Christina via office@wildtrout.org.

6. Acknowledgements

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service, in part funded through monies from rod licence sales. The advice and recommendations in this report are based solely on the expert and impartial view of WTT's conservation team.

7. 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.

Legal permissions must be sought before commencing work on site. These are not limited to landowner permissions but will also involve regulatory authorities such as the Environment Agency, local Council – and any other relevant bodies or stakeholders. Alongside permissions, risk assessment and adhering to health and safety legislation and guidance is also an essential component of any interventions or activities in and around your river.