



# WILD TROUT TRUST

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**An Advisory Visit by Nick Lawrence of the Wild Trout Trust, December 2020**  
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## 1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the River Ebble at Coombe Bissett in Wiltshire. The visit was carried out at the request for Paul Welling (Property Industry Fly Fishers) who has just secured a lease for the fishery. He is interested in enhancing the river's potential for Brown Trout.

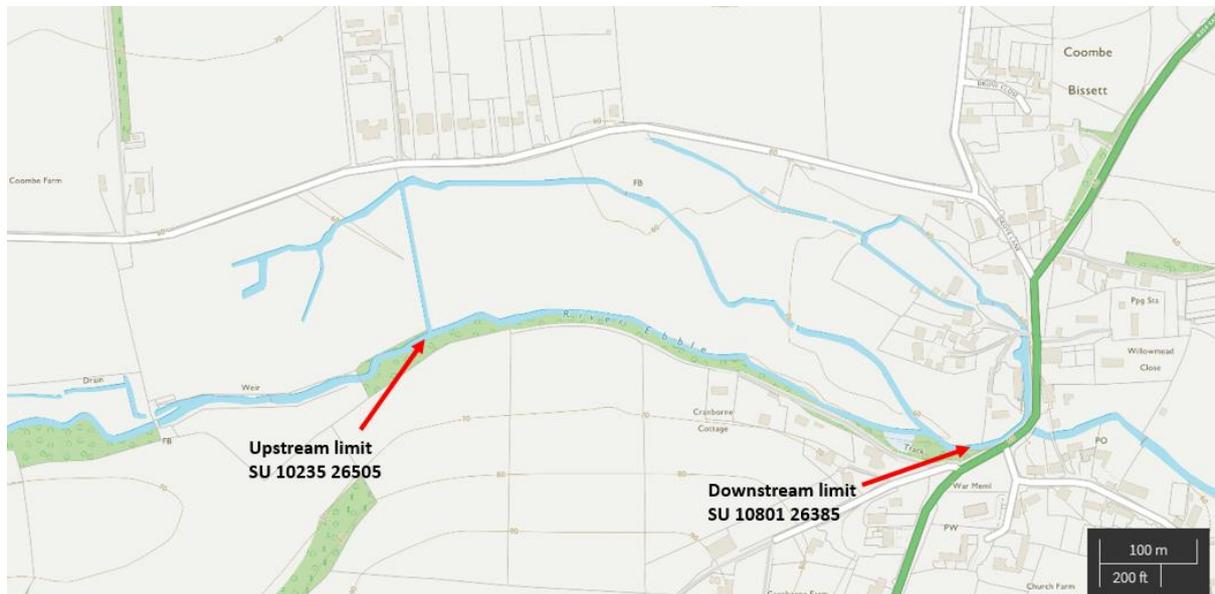
The Ebble has a reputation as a first class wild trout fishery and in 2008 the Environment Agency (EA) consulted local fishery owners and managers over designating the river as a Wild Fisheries Protection Zone (WFPZ) under the provisions set out in the National Trout and Grayling Fisheries Strategy. This effectively means that it has been recognised that stocking the river with fish is both unnecessary and potentially damaging to the native population, and any future applications to introduce fish will no longer be consented by the EA.



Photo 1 Notice of the Wild Fisheries Protection Zone.

The comments and recommendations made in this report are based on observations made by the Trust's Conservation Officer, Nick Lawrence, Paul

Welling and his riverkeeper Pat Moyle. Throughout the report, normal convention is followed with respect to bank identification i.e., banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream. The report works in an upstream direction.



Map 1 The reach visited.

## 2. Catchment overview

The River Ebble is one of the five rivers of Salisbury. Rising at Alvediston 12 miles to the west of Salisbury, it joins the River Avon 2 miles south of the city at Bodenham. The river displays many classic chalk stream characteristics such as clear water, low soft margins, and in-channel plant communities dominated by water crowfoot, starwort and water moss. Unlike the chalk rivers found further to the east, the Ebble flows through a mixed geology, including gault clays and greensand bedrock which gives rise to a greater variation in flows compared to the chalk rivers in Hampshire. As with most lowland rivers in the South, the channel is heavily modified and in-channel habitats are influenced by numerous structures, many of which on the Ebble have been installed to irrigate old adjacent water meadow systems.

The Water Framework Directive status for the Ebble (Waterbody ID GB108043015830) states that the river has a moderate ecological status. This classification implies it's failing on chemical measures due to the detection diphenyl ethers.

### **3. Fishery overview**

The River Ebble at Coombe Bissett has been received light touch management for some years. The adjacent fields are used for sheep and horse grazing with little to no maintenance or livestock exclusion, which is creating maintenance issues for the fishery.

There is one main channel to the fishery extending for ~1.5km with a spring ditch that joins the reach near the downstream limit.

The Advisory Visit recipients are keen to establish how best to improve the fishery for wild trout and grayling, as well as other wildlife.

### **4. Habitat assessment**

The visit started at the most downstream section which appeared to be a livestock drinking area (photo 2) due to the heavy poaching and lack of marginal vegetation. The RB bordered the main road with some hard engineering, while the LB had open access to the field which was well trodden by horses.



Photo 2 Most downstream section near the Salisbury to Blandford road. This area is unprotected from grazing, but the leaning willow has created good overhead cover at a natural pinch point.

The lack of maintenance upstream of photo 2 has allowed some of the most varied habitat within the reach to develop; with some fantastic 'gifts from nature'. Firstly, the heavily leaning willow (photo 2) which provides important low cover over a likely looking run for a trout. Secondly, scrub has started to dominate due to the lack of horse grazing. Photo 3 has a variety of trunks of willow that have entered the channel by natural means, diversifying flow regimes and providing refuge from predators.



Photo 3 A huge variety of beneficial, naturally accumulating woody material.

Upstream from this heavily wooded section, the spring ditch joins the main river. The spring rises from hills on the north side of the valley and had a very good flow, suggesting that the aquifer beneath is well charged. Given that a spring rises at this low point of the valley, and that the ditch conveys a steady flow of clear water, it is possible that the origins of the ditch are in fact the original course of the river. The river and its ditches will have been altered over time for human needs, straightened and furrowed for historic water meadow use, which can be seen in photo 4.

There is potential to diversify and improve habitat within both the river channel and the ditch, and better reconnect the river with its floodplain. Some of these possibilities may be simple to achieve, while others should be a long-term aspiration for the fishery.

The LB fields adjacent to the reach are primarily used for grazing of horses or sheep with unfettered access to the channel. Fencing would allow a

diverse vegetated sward to grow, buffering the river from sediment and associated pollutants, and providing important food and cover for invertebrates. Horse manure heaps were located adjacent to the spring ditch and will undoubtedly affect its water quality. The manure heaps should be moved away from water sources. Farming Rules for water are clear on this – no storage within 10m of a watercourse or within 50m of a spring. (<https://www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution#storing-manure>)



Photo 4 Screenshot from National Library of Scotland showing the furrows on the LB used for wetting of water meadows.



Photo 5 Horse manure piled up adjacent to the spring ditch, a pollution incident.

As shown in photo 5, this should be brought to the attention of the tenant and removed, it is classed as a pollution event and could result in a fish kill, which may well carry a fine. It will already be leaching into the watercourse, polluting it, leading to a decline in the aquatic invertebrate diversity and abundance within the spring-fed ditch and possibly beyond.

Moving upstream, it was noticeable how the reach was straightened and realigned to the southern edge of the floodplain, and the floodplain itself was relatively dry. There is now overshadowing of the lower reaches, compounded by the RB being on the southern side of the valley which is heavily wooded with a hazel coppice (photo 7) further reducing light to the river. The shade, straightening and steep gradient has led to the development of uniform river habitats, essentially the simplified habitat is continuous shallow riffle, lacking flow/depth diversity and reducing sorting of gravels. This reach of river is considered sub-optimal for trout and grayling.



Photo 7 Shading on the southern bank, a typical view in the lower section.

The hazel coppice can be managed on a rotational basis and some of the arisings could be used to build brushwood mattresses (appendix photo 16) while living stems could be hinged into the channel to provide more instream habitat and increase the available holding lies for fish. The woody material will also act to catch marginal plants drifting downstream and aid their colonisation of the reach. If the brushwood mattress is used to narrow the channel and increase flow then it will bring benefits to aquatic plants, especially *Ranunculus*.

Another quick and easy way of creating fish holding areas by diversifying the river bed are woody flow deflectors seen in appendix 15 & 16. These can blow holes into the river bed which will provide deeper pots for larger fish to colonise. This will assist in undoing some of the uniformity of the reach.



Photo 8 Excessive shading again southern bank (RB), hazels middle of shot are prime candidates for hinging. Note the woefully inadequate fencing which does nothing to protect the denuded marginal fringe.



Photo 9 A rarity, woody material naturally accumulating and providing structure for fish populations.

The LB is fully exposed to grazing animals; photo 8 provides an example of how the fence is wholly inadequate. It should be replaced to exclude animals from the riparian fringe, but it may increase the fishery maintenance for fishing access and scrub control.

Incidences of naturally occurring, fallen woody material were rare within the reach due to the shrubs being hazel being managed historically. The LB's grazing pressure has reduced both scrub and tree regeneration. But where trees and shrubs are falling into the channel (photo 9), they will provide diversity to the river flow and variable habitat structure for fish populations. Fallen woody material is an important component within rivers and should never be removed without consideration of the major benefits that it provides.



Photo 10 Concrete boulder weir which serves no current purpose and creates a negative impact upon habitat locally.

Towards the upstream section within the first field there was a concrete boulder weir (photo 10) which would have been used historically to retain water level upstream. This structure will interrupt sediment and gravel transport thus degrading the channel for some distance upstream. As it is no longer required, the redundant structure should be removed. The pool that it has created may provide refuge for fish, so a woody deflector may serve as a useful replacement to maintain scour through the pool once the boulder weir is removed.

Photo 11 shows how weirs impact riverine ecology. The scour pool that a weir creates can be mimicked with carefully placed woody material (such as flow deflectors or hinged trees). This has far greater benefits to the environment as woody structures retain a partially open channel which should not impound the upstream flow nor interrupt sediment transport down the river corridor.

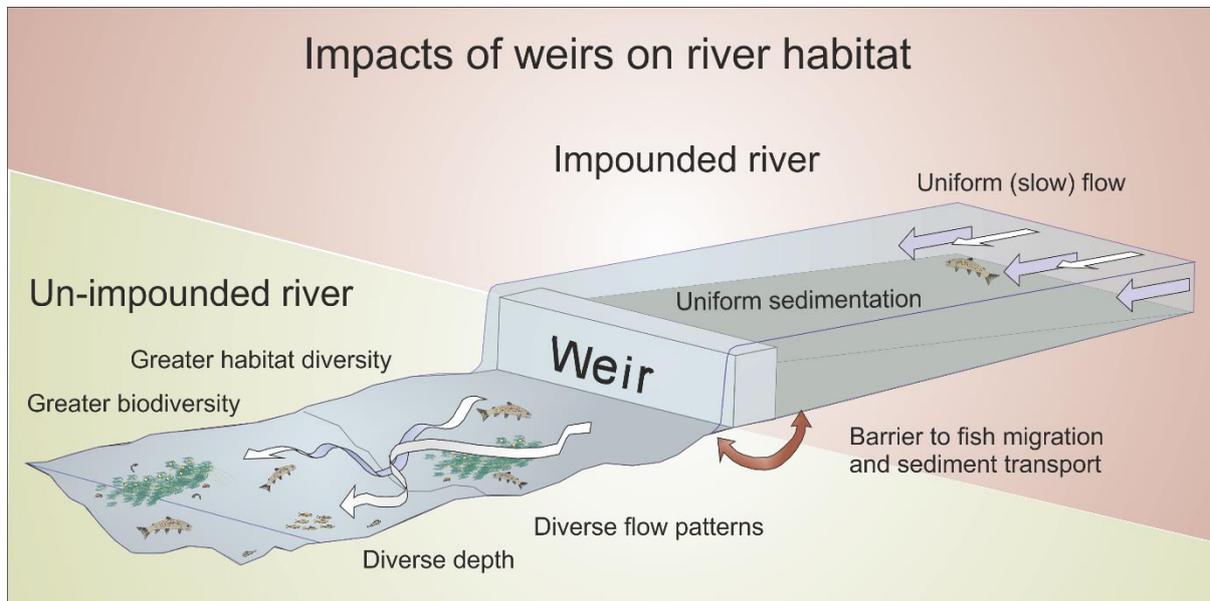


Photo 11 Diagram explaining how weirs degrade habitats.



Photo 12 Old hatch pool providing a good quality holding pool, note lack of marginal plants and erosion on LB due to grazing.

At the top of the first field, the old cut-stone hatches were still in place. These were put in hundreds of years ago (photo 12). Closing of the hatches would have been used to flood the meadows. It is probable that the hatches were installed when the river was straightened to layout a water meadows system. Grazing animals were still impacting on the LB with erosion evident. This area would be a likely spot for some strategically placed woody material to allow sediment to settle and encourage a seed bank for marginal plants, but will still be impacted by grazing animals if left unfenced.

The area around the hatches is the most suitable place for channel realignment and reconnection to the paleochannels. Adjustment could be made to the spring-fed ditch to allow the river to connect with the floodplain, providing better flood storage and a more diverse (meandering sequence) river channel.



Photo 13 Blue line highlights possible path of channel realignment and floodplain reconnection.

This realignment should be seen as a long-term aspiration for the reach, as many of the local habitat issues can be solved by having a fully functioning and naturalised channel within the floodplain. This realignment would also increase the length of the fishery, create more sinuosity, greater width variability to support spawning riffles, and an increased occurrence of pool features which are all highly desirable for the fishery asset.

## Recommendations

The Ebble at Coombe Bissett has some good potential as a flourishing environment for wild trout. In order for the resident brown trout population to reach its full potential in a rich and biodiverse habitat, the following actions are recommended:

- Where tree cover is more dense and the river is over-shaded (indicated by a noticeable absence of aquatic vegetation, and/or greater than 50% tree shading), instigate sensitive tree works to open up some occasional skylights in the canopy. If required, programme a rotation of pollarding/coppicing works focussing on the southern banks, e.g., 10% of the stools every year, with the aim of introducing light to diversify marginal plants. Try to retain as much low-lying cover as possible, especially over good lies. Use the coppice arisings to install habitat structures (see appendix photo 16) especially where the channel is well lit. The use of large woody deflectors also will help to provide some structure within uniform reaches (lower section), 8-10 of these could transform the reach.
- In conjunction with some skylighting works encompassing coppicing (mostly hazel), habitat instream could be improved by hinging some of the material from the stool into the edge of the channel, in a downstream direction (examples in appendix photo 19). Such hazel stools should be carefully selected for optimal benefit, in consultation with WTT to select the best opportunities.
- Continue to employ light touch management, e.g., leave fallen trees in the river. If a tree does fall in a place where it might cause a problem, give it time to see how it settles. After this, and if the tree is problematical, move it to a more favourable position and secure it with posts and wire to retain the ecological (and fishery) benefit. Fallen trees are the 'gift from nature' in that they need no paperwork, they should never be removed without consideration of the major benefits that it provides.
- Engage with the farmer/ tenant firstly with regard to manure deposits adjacent to the river to see if these can be stored in a more appropriate place i.e., At least 10 meters away from a watercourse. Secondly, discuss the possibilities of livestock exclusion from the river bank, ideally a 5-10 metre buffer strip. This needs to be strategic as it may increase maintenance in time.
- Remove redundant weirs. Use woody material to maintain scour through the pools.
- Invite the EA for a meeting to assess the options for a restoration project. WTT would be happy to act as a broker to help this meeting happen. This could be exploring the possibilities of channel realignment which would solve many of the localised habitat issues especially with regard to the straightened, overly uniform and shaded channel.



Photo 14 The spring ditch within the middle of the floodplain. Could the main river be reconnected to this lowest point?

- If a project is seen as a possibility, there are landowner grants available within a project called Crystal Clear Ebble, run by the Wessex Rivers Trust: contact Matt Irvine [Matt@wcsrt.org.uk](mailto:Matt@wcsrt.org.uk) for more information on this project.

## **5. Making it Happen**

Further assistance from the Wild Trout Trust is available in the form of:

- Helping obtain the necessary consents for carrying out in-stream works, from either the Environment Agency, or in the case of watercourse not designated as a "Main River" from the Lead Local Flood Authority.
- A practical visit from a WTT Conservation Officer to demonstrate the simple habitat improvement techniques outlined above. This enables recipients to obtain on the ground training in the appropriate use of conservation techniques and materials, including Health & Safety, equipment, and site requirements. This will give projects the strongest possible start leading to successful completion of aims and objectives. Recipients will be expected to cover travel expenses of the WTT attendees.

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

<http://www.wildtrout.org/content/library>

The Wild Trout Trust has 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 <https://www.wildtrout.org/shop/products/rivers-working-for-wild-trout-dvd> or by calling the WTT office on 023 9257 0985.

### **Acknowledgement**

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programme in England, through a partnership funded using rod licence income.

### **Disclaimer**

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## Appendix

Examples of enhancement structures.



Photo 15 A simple log deflector, good at creating scour within the river bed to create structure for trout.



Photo 16 Small brushwood structures and a woody deflector to improve sinuosity and scour of a straight channel and allow marginal plants to develop.



Photo 17 & 18 Before and after, note how the rough structure has trapped fine sediment and allowed marginal plants encroach into the channel.



Photo 19 Hinged willow on the Bourne in Wiltshire. Hazel, willows and small alders can be hinged into a river, creating diversity of flow and in-stream cover for fish. The trees are hinged in a similar manner to hedge laying, where the tree is partially cut through at the base and laid into the river margin. Chestnut stakes and fencing wire can be used to secure the trees in place. Willow will survive perfectly well even with 70% of the branches submerged; however, hazel and alder should be laid to retain much of the structure above water level.