



River Enborne, Wasing Estate



Advisory Visit April 2017

Key Findings

- **This lower section of the River Enborne currently supports a healthy wild trout population and is underpinned by a wide range of high quality habitats for all life stages of the brown trout.**
- **Enhanced protection from agricultural diffuse and point source pollution is required, with a need for wider, undisturbed buffer zones, especially adjacent to the left bank.**
- **A long section of channel running upstream from Shalford Farm is adversely impacted by an EA flow gauging weir.**
- **A very light touch to the high tree canopy is required in places and facilitating some access for the wading angler is all that's required to turn this into an exciting wild trout fishery.**
- **Where the channel is completely blocked with woody material, simply pin down the trunk to the river bed and cut out a narrow gap for wading access.**
- **Retain, or even introduce brushwood cover into the margins of shallow riffle habitat to help improve juvenile trout survival.**
- **The stream is unusually gravel rich and provides some good quality spawning opportunities for wild brown trout and other gravel spawning fish species.**
- **Consider undertaking a programme of river fly monitoring to keep a watching brief on water quality. More information is available at www.riverflies.org**
- **When offering up angling opportunities to the public, market the fishery as a wild trout fishery offering a high quality experience for discerning rods on a catch and release basis.**
- **It will be imperative to keep angling pressure light and regularly rest beats from any angling pressure.**

	River Enborne
River	River Enborne
Waterbody Name	Lower Enborne
Waterbody ID	GB 106039017340
Management Catchment	Kennet and Tributaries
River Basin District	Thames
Current Ecological Quality	Moderate Status
U/S Grid Ref inspected	SU 56141 64155
D/S Grid Ref inspected	SU 59016 66135
Length of river inspected	5.0km

Table 1. Overview of the waterbody. Information sourced from <http://environment.data.gov.uk/catchment-planning/WaterBody/GB1060400013360>

2. Catchment Overview

The River Enborne rises from chalk springs near the village of West Woodhay in the Berkshire Downs and flows west for approximately 20km, in places forming the county boundary between Hampshire and Berkshire, before swinging northeast to join the River Kennet at the Old Mill in Aldermaston.

The river is heavily influenced by the local geology. Initially rising from chalk, it cuts through a varied geology of Bracklesham beds and the Thames Group of clays and gravels. The Enborne's numerous small tributaries that flow north, draining the acidic sandy soils in the Newtown and Burghclere areas, heavily influence the chemistry and physical form of the Enbourne. Unlike the main River Kennet, where the river is characterised by low banks, stable flows and clear water, the Enborne in contrast is more "flashy" in character, responding quickly to surface water run-off within the catchment and usually carries a tinge of ochre colour, generated by the iron rich groundwater fed in via the southern tributaries.

3. Habitat Assessment.

At the time of the site visit, the river was carrying additional flow and colour, making it difficult to assess the full range of habitat availability and quality. It was, however, soon evident that the river supports a diverse range of habitat well suited for wild brown trout (*Salmo trutta*) production.

Much of the river bed sits within an incised channel and it was clear from the shape of the banks that the river has been historically subjected to intensive drainage work, presumably in an attempt to improve production from local fields (photo 1), which border the river for much of its length. However, the river channel still retains a meandering planform and the relatively steep bed slope, coupled with a gravel-rich substrate (photo 2 & 3) and lots of fallen woody material (photo 4), has helped to re-shape the river bed. This combination of the river's physical characteristics has facilitated the formation of an incredibly valuable series of pools, riffles and glides (photo 5, 6 & 7).



Photo 1. Much of the lower Enborne has been dredged in the past to facilitate improved agricultural drainage.



Photo 2. Evidence of the gravel-rich nature of the river bed, which is particularly prominent in the lower half of the fishery.



Photo 3. Mole hills on top of the bank clearly depict how much gravel was removed from the channel during past drainage works. The whole flood plain is rich in alluvial gravel deposits and bank and bed erosion has freed up gravel deposits to create high quality spawning habitat.



Photo 4. One example of several fallen trees that promote the creation of deep pools and shallow gravel runs, highlighting the critically important benefits associated with fallen woody material.



Photo 5. The tail of a typical pool, flowing over a gravel rich bed and on into a broken riffle. Potentially a high quality spawning location for brown trout



Photo 6. A typical pool formed on the outside of a bend and providing quality holding habitat for large adult trout.



Photo 7. Another example of high quality spawning habitat with a broken shallow riffle below, potentially providing ideal nursery habitat immediately d/s for post-emerging fry.

The high quality habitat generated by the relaxed approach to tree maintenance has undoubtedly contributed towards providing topographical diversity in the channel shape that is now widely evident. In moving from an entirely unmanaged river channel to one where fly-fishing is to be facilitated will require a careful balance to be struck. From feedback provided by Mr. Hibbs and from electric fishing data obtained from local fisheries contractor (Mr. Martin Moore) it would appear that the trout population is responding well to the habitats on offer in the River Enborne.

As well as examples of large woody material promoting bed and bank scour, there were numerous examples of marginal brushwood, either overhanging or fallen into the channel (photo 8 & 9). In moving to a managed fishery, the temptation is to remove most of this material to facilitate access for casting but it will be of critical importance to ensure that the flow diversity and cover provided by the woody material is retained wherever possible. Striking the balance between providing cover for fish and access for angling will be the key to the success or failure of any plans to develop the lower Enborne as a high quality wild trout venue.

Issues associated with managing woody material are complicated by the presence of high densities of non-native signal crayfish *Pacifastacus leniusculus* which burrow into the toe of river banks causing weaknesses in the bank, particularly those which are devoid of root systems, often resulting in excessive bank erosion. This in turn leads to channels becoming over-wide for the given average flow discharge, resulting in siltation of in-channel gravels, loss of habitat quality, and a reduction in wild trout production. Signal crayfish are also known to adversely impact on slow-moving invertebrate taxa which are essential in providing the fly-life needed for any high quality trout fishery.

On the plus side, wild brown trout are capable of exploiting crayfish for food and it is not unusual to find very large wild brown trout on streams which support high densities of signal crayfish.

Long sections of the LB are vulnerable to erosion due to the encroachment of agricultural practices, leaving the river bank devoid of a substantial buffer zone (photo 10 - 12). This was of particular concern on some of the sections currently under arable production. As well as leaving the margins vulnerable to erosion, the lack of any substantial buffer areas is also providing pathways for nutrient rich sediments to run over-land and straight into the river channel. The problem is exacerbated by the location of the access track, leaving no room for the development of any vegetated buffer. Diffuse pollution associated with agricultural run-off is known to be a major factor in rivers failing to meet targets set under the Water Framework Directive.



Photo 8. The trailing brushwood on the inside of the bend will help to encourage sediment deposition there and promote bank erosion on the undefended outside of the bend. Light bank erosion where fresh gravels are mobilised is considered to be a healthy natural process.



Photo 9. Another example of low-level brushwood cover. The very outside branch could be trimmed off to facilitate a cast but it is essential to retain the bulk of the marginal cover.



Photo 10. Access track is too close to the top of the river bank



Photo 11. A large arable field adjacent to LB. Ideally a much wider buffer zone of at least 20m is required to intercept over-land run-off.



Photo 12. Wide buffer zones are even more important at the bottom of sloping fields as in the case of this field adjacent to the RB.

The bottom 0.5km of channel flows through a wooded section. Habitat quality here was considered to be excellent and management options should be restricted to options to enable wading anglers to be able to enter and exit the channel safely, and a light trim of some of the high level shading to allow the odd shaft of light to penetrate the canopy and to facilitate some casting. It would be a mistake to carry out clearance or 'tidying up'; woody material that currently completely blocks the channel can be eased with a light trim, or slightly moved and pinned to enable better access.

The Enborne is not a chalkstream and it would be a big mistake to introduce any traditional chalkstream keeping techniques to this channel. Allowing rods to slip into the channel with chest waders and pick their way upstream and fish around and through the rich mosaic of habitat would be both rewarding and highly productive. This type of "wild" river trout fishing is not for everybody but there is undoubtedly a demand for access to such fisheries, particularly in a location so close to the capital.

Located approximately half way along the fishery adjacent to Shalford Farm is an Environment Agency flow-gauging weir (photo 13). This structure is adversely impacting on habitat quality, particularly in the 200m of channel running u/s of the structure, where its impounding nature has led to the loss of the pool and run sequence and the deposition of fine sediments (photo 14). It would appear that the EA have made some attempts at improving access for migrating fish at this structure with the addition of baffles being bolted to the downslope of the crump weir. It is likely that larger adult trout will now be able

to pass upstream on spawning migrations. However, the structure still represents a significant barrier to migration for smaller trout and potentially a range of other species.



Photo 13. EA controlled flow gauging weir with baffles bolted to the face.



Photo 14. The natural bed slope in the reach running immediately above the gauging weir is drowned out by the impoundment.

Further u/s still, the river channel appears to take on a different character with a subtle change in local geology. Here the banks are heavily lined with mainly alder (*Alnus glutinosa*) trees (photo 15). It was also apparent that the toe of bank was devoid of any semblance of gravels, so prevalent in the reach downstream of Shalford Bridge.

Despite the apparent lack of gravels, the presence of so much fallen woody material and the steep gradient still provided some good quality habitat for trout in the reaches further upstream. It is assumed that some seams of deposited gravels were prevalent in the reach above. Despite an apparent lack of high quality spawning sites, the reach still looks as if it should support good numbers of adult fish (photo 16)



Photo 15. Large numbers of mainly alder trees line both banks in the impounded reach running upstream of Shalford Bridge



Photo 16. Upstream sections still appear to have the potential to hold significant numbers of adult trout, which was confirmed during a pike cull carried out several years ago using electric fishing equipment.

A short section of the River Kennet was also inspected a few hundred metres downstream of the River Enborne confluence. There is no doubt that these lower sections of the Kennet, which have historically been managed as coarse fisheries, now support substantial numbers of wild brown trout, some of which grow to impressive specimen size on a rich crayfish diet. The high quality spawning and nursery habitat found in the Enborne will be responsible for constantly trickling wild trout stocks into the main Kennet as growing fish disperse, looking for unoccupied territory. The combination of a beat on the main river, coupled to wading beats on the Enborne, make this fishery a very attractive proposition for specialist wild trout anglers.

4. Conclusions

The River Enborne running through the Wasing Estate supports some excellent habitat for all life stages of brown trout and represents an exciting opportunity for specialist wild trout anglers. The nature of the channel and the local characteristics that underpin the high quality habitat found in this reach do not lend themselves to traditional lowland bank fishing, as provided on most of the southern chalkstream beats, including the middle and upper Kennet. The reach does, however, provide adventurous anglers, who are prepared to wade, the opportunity to experience high quality wild trout fishing within an hour's drive of London. Experienced anglers used to tackling west country, or border streams will feel comfortable fishing on the Enborne.

Information provided to me via email by Martin Moore suggests that the Enborne at Wasing already supports an excellent stock of wild trout, with 599 fish recorded during an electric fishing exercise that covered approximately 1500m of channel. 88 of those wild trout were recorded as being "large" with the largest fish estimated to weigh in the region of 5lb. If accurate, this represents an extremely healthy stock of wild fish and potentially provides an attractive prospect to anglers with the right mind set. Any thoughts on augmenting this wild Enborne population with additional stocked fish of farm or broodstock origin could be a catastrophic mistake and potentially spoil what is already a locally adapted population in a very special fishery located where it is, so close to London.

Habitat quality has undoubtedly developed through the river being largely neglected. In creating an opportunity for angling it will be imperative not to ruin the very bones of what makes this channel valuable though a desire to make it "fishable". It is already fishable but undoubtedly challenging. A very light touch to the high canopy is all that is required to facilitate the odd cast. If some sections of the channel remain unfishable then all the better because in a wild trout fishery it is imperative that a proportion of the population remain unmolested, out of reach of the angler. Anglers who appreciate this sort of fishery, also appreciate this ethos.

Where large woody tree trunk dams have developed, pinning the main bulk of the trunk to the bed, or gently moving and trimming out the odd small gap is all that's required. Likewise, with the wispy brash cover; retaining as much cover, particularly over river margins is imperative if the trout population is to remain comfortable and adequately protected from predators. The fallen woody material is also a critically important habitat component for many species of aquatic invertebrate and is essential for any high quality fly-fishery.

In opening up this fishery for angling, a light touch is required. In excess of 5km of channel could be divided up into 1 km beats and gives the opportunity to regularly rest beats from any angling activity. In a fishery that will be reliant on 100% catch and release, it will be important to rest beats on a weekly basis. Cutting out a simple but safe access at the top and bottom of each beat is all that's needed. Anglers should be encouraged to sign into and out of the fishery and leave an accurate catch record following each visit to monitor catch per unit effort and hence assess fishery condition. Fishing with barbless hooks and mandatory catch and release is imperative for a wild fishery of this type. For more information on catch and release, visit the WTT web site: <http://www.wildtrout.org/content/wild-trout-fishing#catchandrelease>

Opportunities to further improve and protect the fishery largely rely on changes to the way the adjoining land is managed. Increasing the width of river side buffer zones is recommended as a priority, as is moving any access tracks away from the top of the banks and intercepting any pathways for damaging sediment rich run-off.

The EA gauging weir is adversely impacting on local habitat quality. Alternative technology is available for flow gauging and encouraging the Agency to upgrade

their flow-gauging facilities without the use of an impounding crump weir is recommended.

5. Recommendations

- Identify and address problems associated with diffuse pollution and surface water pathways capable of carrying nutrient rich sediments directly into the stream. A combination of wider buffer zones, contour tree planting and strategic bund creation to intercept flow into soak-away areas would represent best practise. To be effective buffer zones should be at least 20m wide, especially on sloping field margins
- Question the need for the crump weir style flow gauging weir and push for alternative technology so that the weir can be removed.
- Move but do not remove fallen woody material that is deemed to be causing a local issue; elsewhere, leave it to establish naturally.
- Retain as much brash and brushwood in marginal zones as possible. This is particularly important adjacent to riffle habitats.
- Market and manage the fishery as a wild trout, catch and release fishery.
- Target experienced anglers who are used to wading and who are in-tune with the ethos of wild trout fishing.
- Spate river wild trout fishing unfortunately does not generate the high ticket prices of stocked chalk stream beats. However, only light maintenance is required and with no outlay for stocking required the fishery can still generate significant income. The location in the M4 corridor is likely to be of interest to London-based anglers looking for a local opportunity.

6. Making it Happen

The WTT can provide further assistance to help implement the above recommendations. This includes help in preparing a project proposal with more detailed information on design, costs and information required for obtaining consents to carry out the works. If required, a practical visit can be arranged to demonstrate habitat improvement techniques. Demand for these services is currently high but WTT is able to provide further advice and information as required. Further advice on fund-raising can be found at www.wildtrout.org/content/project-funding

We have 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 www.wildtrout.org/product/rivers-working-wild-trout-dvd-0 or by calling the WTT office on 02392 570985.

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

7. Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service.

8. 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.