Dodham Brook, Yeovil, Somerset

Wild Trout Trust report following an Advisory Visit on 14 December 2018

Contents

Introduction

This report is the output of a visit undertaken by Theo Pike and Mike Blackmore of the Wild Trout Trust on approximately 2km of the Dodham Brook in Yeovil, Somerset. A walk-over of the site was requested by the Yeovil Community Rivers Trust (YCRT). The visit was primarily focused on assessing habitat for wild brown trout *(Salmo trutta)* and biodiversity in general.

Comments in this report are based on observations on the day of the site visit and discussions with personnel from YCRT. 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.

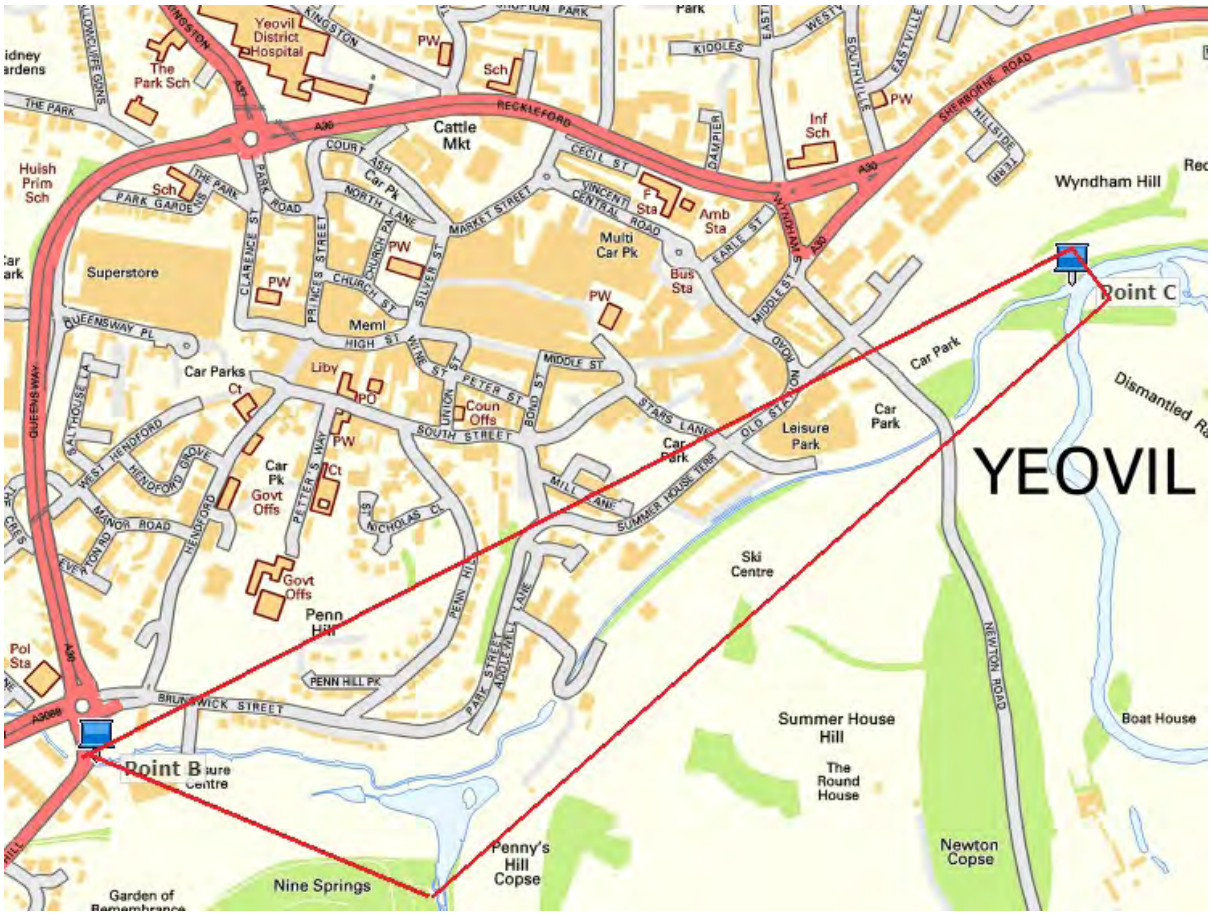

Figure 1: Map showing the location of the Dodham Brook in Yeovil.

Catchment and Fishery Overview

The Dodham Brook is a small, highly urbanised tributary of the Somerset River Yeo.

River	Dodham Brook
Waterbody Name	Dodham Brook (Yeo (Somerset))
Waterbody ID	GB108052015600
Management Catchment	Somerset South and West
River Basin District	South West
Current Ecological Quality	Moderate (as at 2016)
U/S Grid Ref inspected	ST 55298 15440
D/S Grid Ref inspected	ST 56502 16027
Length of river inspected	2km approx

Table 1: WFD information for the Dodham Brook.

The Brook rises in an area of springs to the west of Yeovil, and is believed to be culverted around and under the AgustaWestland industrial site. Its flow is augmented by the smaller Preston Brook, as well as springs at Ninesprings Country Park, before being channelised through an area of former mills and railway yards, now redeveloped as retail parks, to join the Yeo near Penn Mill.

Yeovil lies in a landscape known as the 'Yeovil Scarplands', a mainly rural landscape of broad ridges and steep scarps separating sheltered clay vales. The town itself is built on an area of siltstone, sandstone and limestone, all sedimentary bedrocks laid down approximately 176 to 190 million years ago in the Jurassic period in a predominantly shallow marine environment.

In its history, Yeovil has undergone a number of transformations, many of which have impacted its rivers and streams. Past industries included glove making, and Yeovil is now a hub for aerospace development centred on the AgustaWestland complex on the west side of the town. Yeovil was also a busy junction of various railway lines, and traces of former track beds can be detected in several areas along the Dodham Brook. Around the same time, areas like Ninesprings Park were laid out as ornamental parks for private estates.

Under the Water Framework Directive (WFD: the scheme currently used to assess Ecological Status and Ecological Potential of our surface waterbodies in Britain), the Brook is classified as a 'Heavily Modified Water Body' (HMWB) as a result of high levels of historic modification, often for the purposes of industry.

For HMWBs like the Dodham Brook, the classification of Ecological Potential (rather than Ecological Status) is applied. The Environment Agency (EA) data held for this waterbody indicate that it has an overall classification of 'Moderate' for Ecological Potential according to the most recent assessment in 2016. It is encouraging to see this improvement from 'Bad' Ecological Potential in previous rounds of assessment in 2013, 2014 and 2015.

According to the EA's data, reasons for the Dodham Brook not achieving 'Good Ecological Potential' (GEP) include physical modification, diffuse and point source pollution impacting water quality, and possibly intermittent low flows as a result of groundwater abstraction. Many of these typical urban pressures were evident during the walkover survey, and others (such as point source pollution events) were confirmed anecdotally by YCRT.

Further details of the Dodham Brook's WFD classifications can be found at:

https://environment.data.gov.uk/catchment-planning/WaterBody/GB108052015600

Although the Dodham Brook is classed as a HMWB for WFD purposes of the Water Framework Directive, the Yeovil Country Park Management Plan (2013 - 2017) states that *"sticklebacks frequent the steams near the source pond in Ninesprings and roach and rudd are in abundance in the lake"* while kingfishers and water voles are also present:

https://www.southsomersetcountryside.com/media/1180/ycpmgmtplan.pdf

A wide range of species, including trout, have been recorded in the Yeo, at the lower end of the Dodham Brook, and it would be reasonable to suggest that they could recolonise the Brook if fish passage and habitat issues were successfully addressed.

Thanks to their need for clean, well-oxygenated water, structurally-varied habitat and free movement between different habitat types, the UK's native wild brown trout makes an ideal indicator species for healthy rivers. These characteristics mean that a simple and effective assessment for river health can be based around the life cycle requirements of brown trout.

The factors required for robust populations of wild trout map very well onto the more general requirements for healthy, diverse communities of flora and fauna in river corridors. In fact, the quality and diversity of riverbank, overall structural variety and associated fauna is of vital importance to the prospects of aquatic species (including trout).

Identifying and noting the presence or absence of habitat features that allow trout to complete their full life cycle is a very practical way to assess habitat quality (Fig.2). By identifying the gaps (i.e. where crucial habitat is lacking: Figs. 3-5), it is often possible to design actions to solve those habitat bottlenecks.

Even where there is little or no chance of wild trout colonising a stream, those requirements for structurally varied habitat, diverse vegetation and clean water are all good yardsticks for assessing its general health.

This means it is useful to examine a stream like the Dodham Brook for habitat bottlenecks that would prevent self-sustaining trout populations from existing.

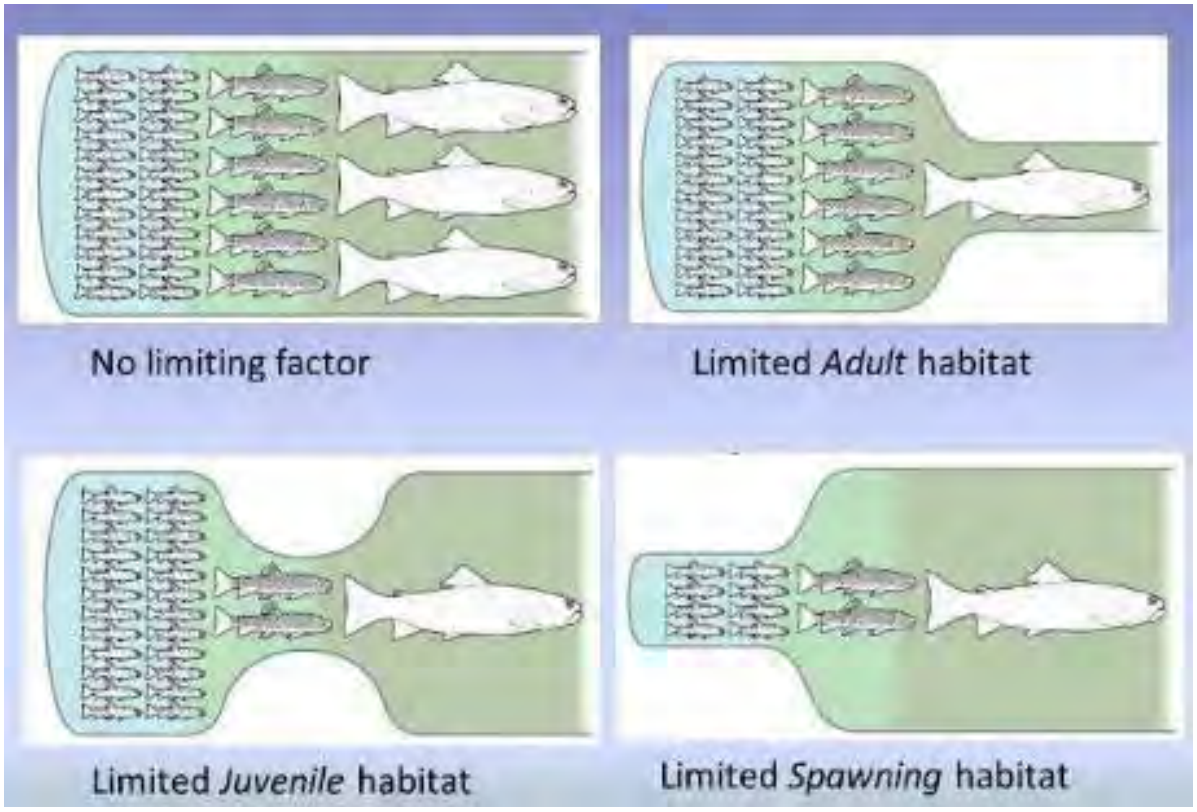

Figure 2: The impacts on trout populations lacking adequate habitat for key life cycle stages. Spawning trout require loose gravel with a good flow-through of oxygenated water. Juvenile trout need shallow water with plenty of diverse structure for protection against predators and wash-out during spates. Adult trout need deeper pools (usually > 30cm depth) with nearby structural cover such as undercut boulders, sunken trees/tree limbs and/or low overhanging cover (ideally trailing on, or at least within 30cm of, the water's surface). Excellent quality in one or two out of the three crucial habitats may still not be able to make up for a 'weak link' in the remaining critical habitat.

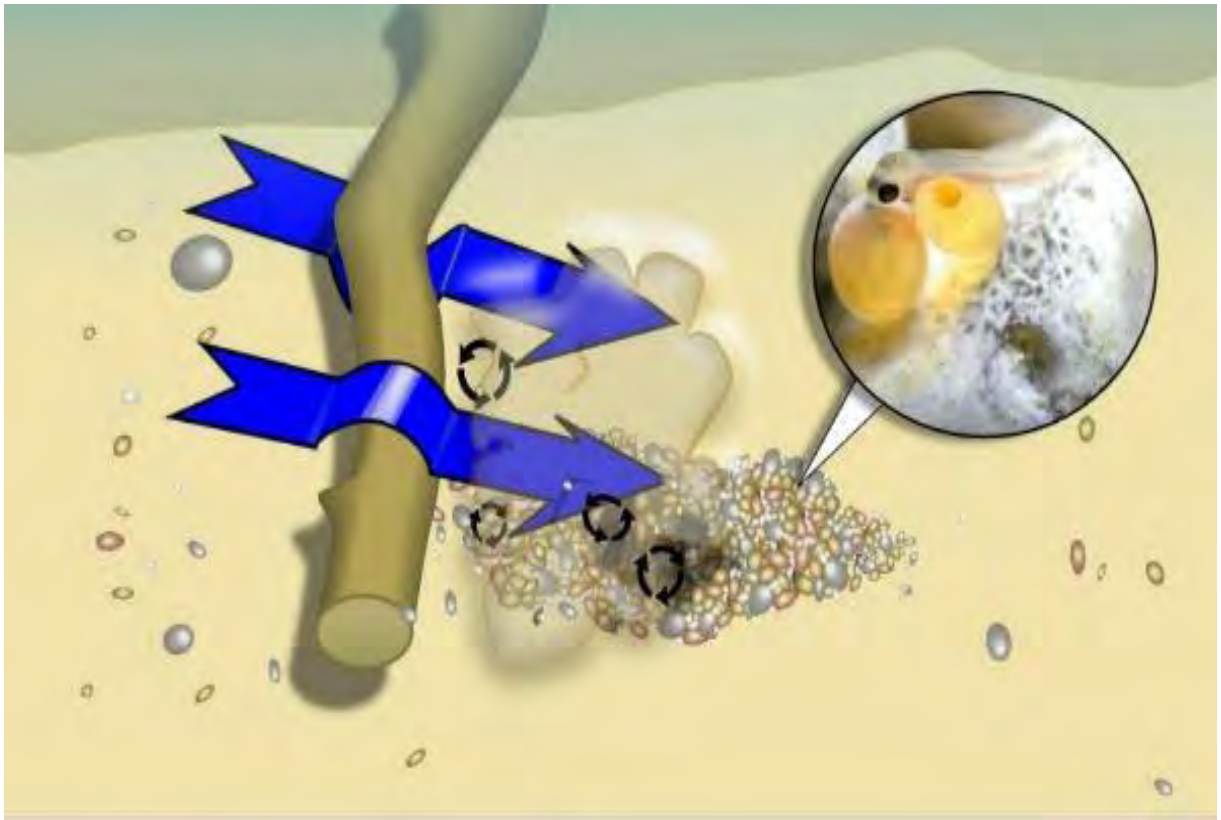

Figure 3: Features associated with successful trout spawning habitat include the presence of relatively silt-free gravels. Here, the action of a fallen tree limb is focusing the flows (both under and over the limb as indicated by the blue arrows) on a small area of river-bed that results in silt being washed out from between gravel grains. A small mound of gravel is deposited just below the hollow scoured out by focused flows: this mound will be selected by trout to dig a 'redd' for spawning In the silt-free gaps between the grains of gravel it is possible for sufficient oxygen-rich water to flow over the developing eggs and newly-hatched 'alevins' to keep them alive as they hide within the gravel mound (inset) until emerging in spring.

Figure 4: Larger cobbles and submerged 'brashy' cover and/or exposed fronds of tree roots provide vital cover from predation and spate flows to tiny juvenile fish in shallower water (<30cm deep). Trailing, overhanging vegetation also provides a similar function, and has many benefits for invertebrate populations (some of which will provide a ready food supply for the juvenile fish).

Figure 5: The availability of deeper water bolt holes (>30cm), low overhanging cover and/or larger submerged structures such as boulders, fallen trees, large root-wads etc. close to a good food supply (e.g. below a riffle in this case) are all strong components of adult trout habitat requirements.

To put all this into context, there are three types of habitat that are needed for wild trout to complete each one of the three key life cycle stages. These requirements create a demand for varied habitat, which is vital for supporting a wide variety of species.

With these broad descriptions of the elements of spawning, juvenile (nursery) and adult trout habitat in mind, measures to address the issues identified during the survey can more easily be described.

Habitat Assessment

For the purposes of this report, the water visited will be described from the upstream to the downstream extent visited.

At the upstream limit of this visit, at ST 55298 15440 between the A30 and the access road to Goldenstones Leisure Centre, an extensive 30 – 40m infestation of Japanese knotweed *(Fallopia japonica)* was noted on the LB of the river.

Figure 6: Japanese knotweed on the LB of the Dodham Brook opposite Goldenstones Leisure Centre.

Japanese knotweed is notorious as a highly invasive non-native species (INNS), whose evolutionary history on volcanic islands has adapted it to spread by subterranean rhizomes at a rate of c7m a year, and even grow upwards through concrete or tarmac. It can also regenerate a whole new plant from a fragment as small as a pea. For this reason, cutting or strimming Japanese knotweed is highly inadvisable, and cut or broken fragments are classified as controlled waste.

Figure 7: Japanese knotweed in flower (Photo: GBNNSS).

It is illegal for a landowner to allow Japanese knotweed to spread onto other people's land, and there should be real concern that this will happen imminently in this case. No other INNS were observed in the course of this visit, perhaps because of the time of year, but YCRT personnel noted that Himalayan balsam *(Impatiens glandulifera)* may be present further upstream.

Himalayan balsam is a tall, shallow-rooted INNS, which grows in dense monoculture stands and shades out native plants before dying back in winter, leaving bare soil which is very vulnerable to erosion. When river banks erode, this can cause significant in-channel siltation (one recent study suggests a rate of 10 tonnes per km per year) smothering gravels, invertebrates and fish eggs. Himalayan balsam also reduces biodiversity by suppressing native plants with allelopathic compounds in the soil, and attracting insects to pollinate its flowers preferentially with its strong scent and prolific nectar.

Immediately above and below Goldenstones Bridge at ST 55406 15461, the Dodham Brook is overly straight and wide, but with sufficient gradient and flow that it could be readily improved by a range of simple habitat enhancements. This would create an area of high-quality habitat for fish and other species.

Figure 8: Ripe for enhancement: the Dodham Brook as seen from Goldenstones Bridge.

This site's proximity to the bridge, café and leisure centre would also mean high visibility to local people, demonstrating the real aesthetic benefits of such enhancements to a wide audience.

Just above Goldenstones Bridge, metal maintenance platforms were evident on both banks, apparently for stretching pollution-absorbing booms across the river in the event of a discharge from the industrial areas upstream.

Figure 9: River on a knife edge: platforms for deploying pollution mitigation booms suggest that the Dodham Brook has had a significant history of water quality issues. However, this should not discourage strong community efforts to make the Brook as resilient as possible in the future (and help past polluters to understand that future incidents should be prevented at source, not mitigated afterwards).

These emergency provisions serve as an all-too-present reminder that most urban rivers exist on a knife edge – little more than a burst pipe or accidental spillage away from damage by pollution. Being aware of this threat should not discourage urban river restorationists, but make us more determined to increase our rivers' resilience, and make them better placed to recover from such incidents, as and when they do occur.

On a practical level, these pollution mitigation structures could also help to protect future channel enhancements around Goldenstones Bridge.

Through most of Ninesprings Park from Goldenstones Bridge to Addlewell Lane, the Dodham Brook is seriously affected by the impounding effect of a large weir at ST 55853 15506.

Figure 10: Impounded water above Ninesprings Weir.

The impact of Ninesprings Weir is evident in the form of a long stretch of very slowly-moving water, where sediment carried in suspension drops out of the water column uniformly across the river bed, and habitat quality and diversity are severely degraded. Such conditions can sometimes provide sufficient deep-water habitat for small numbers of adult trout, but are unsuitable for spawning, fry or juveniles.

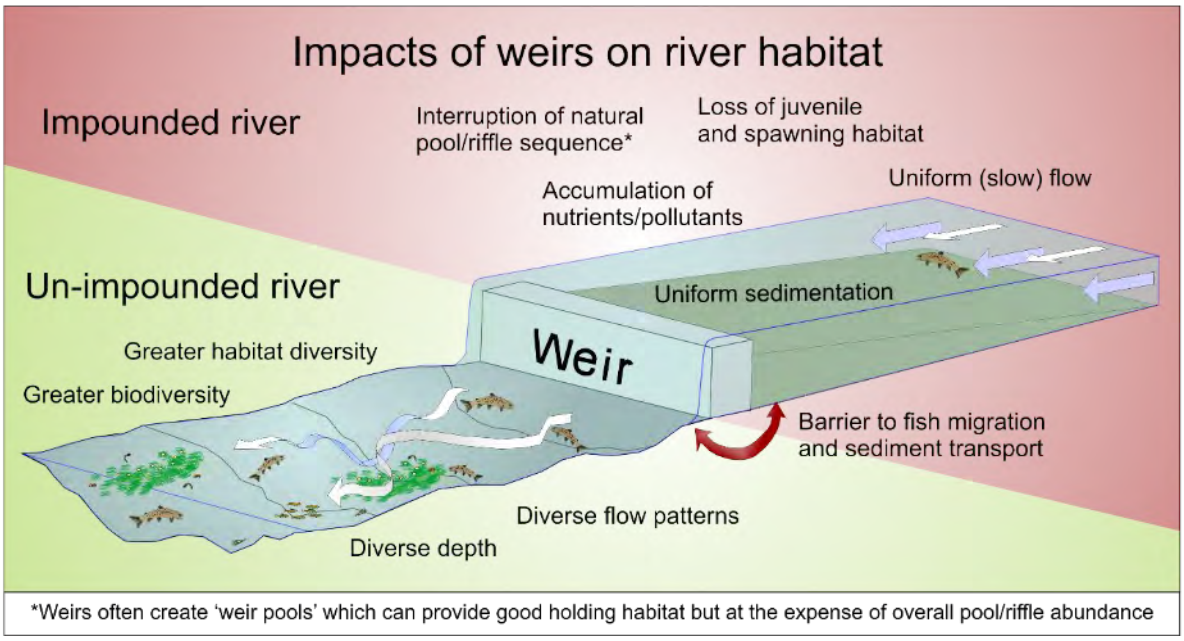

Figure 11: An illustration showing the impacts of weirs on habitat quality.

Weirs are often significant barriers – or even complete obstacles – to fish passage, preventing many species from moving up and down rivers freely to fulfil the different stages of their life cycles. Weirs also interrupt the natural transport of river sediment. This can cause the river downstream to become depleted of coarse sediment, and increase rates of bed and bank erosion in an attempt to compensate for the interrupted supply of suitable gravel and cobbles.

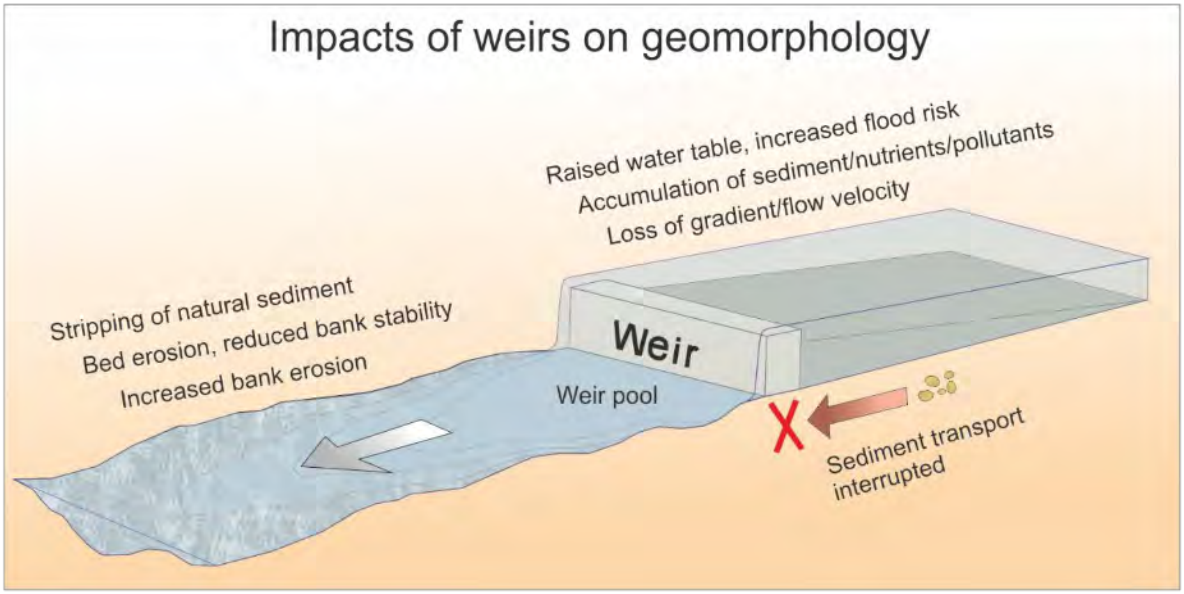

Figure 12: An illustration showing the impacts of weirs on river geomorphology.

For approximately half of the Dodham Brook's length through Ninesprings Park, the impounded stream forms an unnaturally overwide and over-deep 'wet fence' along the back boundaries of a number of private gardens.

Figure 13: The Ninesprings Weir impoundment extends upstream for several hundred metres, and forms a sluggish, anoxic 'wet fence' between the park and a number of private gardens.

From the earliest stages of planning to reduce the height of the weir, it is likely that residents would require careful communication of the ecological benefits of more dynamic flow (but lower water levels) which would result – perhaps assisted by artists' impressions and demonstrations of improvements on other stretches of the Dodham Brook.

Careful early investigation would also be needed to reassure residents and other stakeholders that the gardens and other banks of the stream through the park, as well as the berm separating the Brook from Ninesprings Lake, would not be destabilised by the loss of hydrologic pressure from lowering the water level. Tree planting is an established strategy for stabilising banks in such cases.

Proceeding downstream through Ninesprings Park, around half of this impounded length of the Dodham Brook is heavily 'tunnelled' by trees: mainly alders *(Alnus glutinosa)* of a similar age, which will also be contributing to siltation every year with a subsidy of leaf litter.

Figure 14: Below the footbridge in Ninesprings Park, the Dodham Brook is impounded and tunnelled with alders.

These trees are providing an important area of cool-shade refuge, helping to mitigate the impact of direct sunlight on very slow-moving water in a small stream – this would be beneficial for trout of all ages. In general, however, a less uniformly tunnelled effect would be preferable, with dappled shade and sunlight in an approximately 60:40 ratio, to promote cool water temperatures as well as a healthy diversity of riparian plants. It is also worth noting that the similar age of most of these alders, together with the spread of the *Phytopthora* pathogen, may result in many being lost in a short space of time in the relatively near future. A regime of tree management, through coppicing and supplementary planting, should be initiated in order to establish structural diversity.

At the lower end of Ninesprings Park, at ST 55853 15506, the source of the long impoundment is finally revealed to be the substantial structure of Ninesprings Weir, whose concrete apron extends beneath the Addlewell Lane bridge.

Figure 15: Ninesprings Weir is completely impassable for fish of all species and age classes.

It is likely that this weir, and / or its predecessor(s), were originally constructed to provide a head of water for factories in the area now occupied by Foundry House and the surrounding retail parks. One of these structures, apparently formed from railway sleepers, is shown in this 1950s postcard image:

Figure 16: Ninesprings Weir shown in 1950s postcard (Photo: Betty Barber née Bird via http://www.yeovilhistory.info/dodham.htm)

Today, apart from supplying water to a short stretch of artificial stream in front of Foundry House (effectively an isolated wetland water feature) with a small volume of flow via a piped offtake, Ninesprings Weir now appears to be a redundant structure. In its current form – a high concrete crest and smooth apron, with laminar flow spread across its full width – it is clearly a total obstruction to fish passage for all species and age classes, including European eels *(Anguilla anguilla)* which are globally threatened.

Below Ninesprings Weir and Addlewell Lane bridge, the Dodham Brook drops into a long, straight concrete-lined channel which extends without much variation for several hundred metres down to Newton Road at ST 56347 15857.

Figure 17: The Dodham Brook's dramatically simplified two-stage channel: utterly inhospitable for all forms of wildlife.

This open culvert appears to have been created c1977 as a flood defence measure in the event of the Yeo backing flood water up the Dodham Brook:

http://www.yeovilhistory.info/dodham.htm

It is possible that this armoured channel was also designed to prevent erosion as a result of sediment transport interruption by Ninesprings Weir. However, simplification and over-deepening may also have occurred before this time: for instance, a photograph from the 1930s shows *'unemployed glovers clearing out Dodham Brook'* as part of a work creation scheme.

Figure 18: 'Cleaning' an unidentified stretch of Dodham Brook in the 1930s (Photo: Roger McElliott via http://www.yeovilhistory.info/dodham.htm)

A further photograph appears to provide a 'reference condition' image of the Dodham Brook below Addlewell Lane c1967 before channelisation took place:

Figure 19: The Dodham Brook at Addlewell c1967: meadow banks, emergent plants and natural morphology before brutal channelisation in the late 1970s (Photo: David Perry via http://www.yeovilhistory.info/dodham.htm)

As might be expected, the present simplified concrete channel can be considered exceptionally hostile for aquatic life at all heights of flow - both in terms of habitat and connectivity between more habitable stretches of the Dodham Brook.

At around the mid-point of this structure, it is understood that the Foundry House housing redevelopment, within the last 10 years, has resulted in two features which invite discussion.

The first is a c75m stretch of stream or wetland, perched high above the current incised channel of the Dodham Brook, apparently supplied with water by a pipe from Ninesprings Weir. This stream displays a range of plants which could be

considered characteristic for a small limestone water body in the local area. A quick rock pick also revealed freshwater shrimp and caddis, indicating reasonable chemical and biological water quality.

Figure 20: The 'water feature' outside Foundry House. The Dodham Brook's real channel has been culverted under the concrete path on the right hand side of this photo.

Adjacent to this 'water feature', a similar length of the Brook's concrete channel has been covered with a flat concrete plinth. It is understood that this culvert was installed to divert a public footpath around the Foundry House car parking area, and would have covered an even greater length of the Brook if finances had been available.

Figure 21: The flat concrete plinth over the Dodham Brook opposite Foundry House.

Below the Newton Road bridge, the Dodham Brook runs through an area of private land which was not accessible at the time of this Advisory Visit. However, it is understood that a hard structure, possibly impassable for fish, is present at the downstream end of the Newton Road culvert, which would merit future investigation.

The public footpath rejoins the Dodham Brook at a point where a large surface water outfall brings runoff into the channel. This stretch of the Brook is very deeply incised through dredging, but its inaccessibility (and small likelihood of flood risk) means that the channel has been permitted to accumulate a number of fallen branches and trees.

Figure 22: A natural dam of beneficial 'large woody material' in the Dodham Brook below Newton Road – providing very valuable habitat diversity for many species.

These natural 'large woody material' (LWM) features benefit the Brook by promoting localised scour, deposition and general 'sorting' of the substrate, thus providing microhabitats for a wide range of insects, plants and animals. No fish were observed during the visit, but the LWM in this area, together with unimpeded passage to and from the main River Yeo a couple of hundred metres further downstream, makes it likely that trout of all age classes, as well as other species, could be present in this stretch – ready to migrate upstream when fish passage and habitat improvements are implemented.

Whenever possible, such LWM should be left in place as highly beneficial habitat – perhaps secured with stakes and wire if higher flows are considered likely to dislodge it and risk blocking bridges or other structures further downstream.

Recommendations

In order for the Dodham Brook in Yeovil to achieve its full potential for biodiversity and good quality habitat, capable of supporting healthy, self-sustaining populations of wild brown trout, the following actions are recommended:

1. Invasive non-native species (INNS)

To prevent the Japanese knotweed noted at ST 55298 15440 from spreading down the Dodham Brook or onto adjoining land, YCRT should approach the local council to take up the issue of eradication with the landowner. Japanese knotweed is probably best controlled by stem injection with glyphosate: due to proximity to the Dodham Brook, Environment Agency consent will be needed for this treatment, as well as appropriate PA1 / PA6 training in safe pesticide use.

Himalayan balsam, which may be present upstream, is easier to address – by means of hand pulling before it has set seed, either piling up the plants in a shaded area to desiccate, or arranging for it to be taken away by the local council for composting. It is important to ensure that pulled plants are broken between the root and first node of the stem, to prevent them from re-sprouting from this point. After the first work parties of the year in May or June, sites should be revisited on a monthly basis until the first frosts, to catch plants which will germinate later and flower without growing to the height of the early-season specimens.

Himalayan balsam seeds can float downstream, so it is advisable to clear this plant from a catchment from the top down: determine the highest point of infestation in the catchment, and focus initial efforts here (with the relevant landowners' permission). Consistent pulling for 3-4 years in succession at any given site should be sufficient to exhaust the seed bank in the soil.

Also, be aware of the chance of seeds being spread by car tyres or the treads of people's shoes: Himalayan balsam plants may consequently appear or reappear where they are least expected. For this reason, careful biosecurity measures are recommended for YCRT personnel and volunteers when moving around the catchment: adopting and promoting the 'Check, Clean, Dry' protocol is highly recommended:

http://www.nonnativespecies.org/checkcleandry/

Because urban streams typically flow through disturbed and degraded environments without a robustly biodiverse ecology of native species, they may be especially vulnerable to invasion by INNS. It is also worth noting the possibility of other INNS arriving via well-meaning members of the public, who may introduce unwanted animals, fish and plants into urban streams or lakes in the mistaken belief that they are beneficially releasing them into the wild.

For more information about controlling INNS, see 'The Pocket Guide to Balsam Bashing': http://www.merlinunwin.co.uk/bookdetailse.asp?bookId=152

2. Goldenstones habitat demonstration site

The long impoundment created by Ninesprings Weir ends a short distance downstream of the access road at Goldenstones Bridge. Together with its high visibility to passing pedestrians and users of the café and leisure centre, this suggests an opportunity to create a 'demonstration site' of high-quality river habitat in this area, and showcase the potential of renaturalising longer stretches in due course.

Enhancements in the Dodham Brook immediately above and below the bridge could include narrowing with brash berms and large woody material (LWM) flow deflectors, secured with chestnut stakes and wire, to promote hydromorphological diversity.

Some of this brash and LWM could be won on site from tree management works, allowing more light into the stream channel for marginal plants to thrive. Visually appealing supportive planting could include purple loosestrife, water forget-me-not, water mint, flowering rush, meadowsweet, hemp agrimony and gypsywort.

Engagement with at least three landowners is likely to be required: this may be facilitated with artist's impressions or photographs of similar sites.

Figure 23: The River Wandle in south London: a similar stretch of urban stream after enhancement (Photo: SERT)

3. Tree management

On the stretch of the Dodham Brook near Ninesprings Lake, it was noted that the bankside trees were mainly multi-stemmed alders of a similar age and vulnerability to the *Phytopthora* pathogen. In order to maintain the beneficial cooling effect of these trees, consideration should be given to coppicing some of them, encouraging them to re-sprout from their stools, thus prolonging their lives. Replacing some of the alders with a wider range of tree species, including hazel *(Corylus avellana)* and goat willow *(Salix caprea)*, would also help to create a more biodiverse riparian zone – allowing other plants to flourish in sunlight and dappled shade.

If it proves possible to reduce the height of Ninesprings Weir, part of the preparations for this work could include hinging some of the alders into the channel, parallel to the bank, secured to their stumps with wire cable if necessary. Such interventions are known as 'tree kickers': their complex structure and hydraulic friction will help to hold back sediment mobilised by re-energised flows, prevent undermining of the banks when the water level drops, and help the Dodham Brook to redefine its own more natural channel in this area.

Figure 24: Hinged carefully into the water, a tree kicker can continue to grow while providing much needed structural diversity for a simplified urban river.

4. Ninesprings Weir

Possibly rebuilt c1977 when the open concrete culvert downstream was constructed, Ninesprings Weir now seems to be defunct apart from providing a negligible flow of piped water to the perched artificial 'water feature' outside Foundry House. As noted above, the weir is maintaining a large and damaging impoundment, preventing natural processes of downstream sediment transport, and creating a totally impassable barrier to many species of fish.

On a balance of terms of ecological costs and benefits, the aesthetic advantages of retaining the Foundry House water feature are far outweighed by the damage inflicted by the weir's impoundment for several hundred metres through Ninesprings Park. It would therefore be preferable to restore a long stretch of Dodham Brook by reducing the weir's height, and compensating for removing the Foundry House water feature by restoring the Brook's concrete channel to a healthy ecological state, all the way from Addlewell Lane to Newton Road.

In the event that full removal of the weir is not currently feasible, it may be possible to reduce its height by notching the crest, and further ease fish passage with a pre-barrage and / or low-cost baffles fixed to the apron and face of the weir. These should be designed and installed so as to focus available flows and add depth and turbulence for fish to 'grip' in their journey up- or downstream. Under the Eel Regulations, consideration should also be given to providing dedicated eel passage for this threatened species.

Figure 25: Low cost baffles installed on a gauging weir on the River Hogsmill: see https://www.southeastriverstrust.org/hogsmill-reconnected-to-the-thames-with-fish-pass-installed-in-kingston/ for the full case study (Photo: SERT)

5. Open concrete culvert

From Ninesprings Weir to Newton Bridge, the Dodham Brook flows rapidly through a straight, featureless concrete channel which appears to be hugely over-engineered for its purpose. However, this offers plenty of opportunities to replace it with a functioning stream , with many benefits for a wide range of species – not just creating connectivity between other areas of habitat, but actually providing good quality habitat in its own right.

It is understood from YCRT personnel that the present channel was constructed in two phases: initially a square-profiled open culvert, which was later modified into a two-stage channel by adding trapezoidal inserts along each side. The original channel is thought to have been built with reinforced concrete, while the later trapezoidal inserts were simply poured.

To make this channel less difficult for fish passage, and less hostile as habitat for all species, it will be essential to add roughness to break up its featureless laminar profile. Existing ideas include breaking small backwaters out of the trapezoidal concrete along each bank. It would also be beneficial to remove the recent concrete plinth to 'daylight' the real channel of the Dodham Brook outside Foundry House: the concrete plate construction should make this quite straightforward.

In the channel, other approaches could include remeandering by breaking out, or otherwise constructing, sinuous alternating berms from the trapezoidal two-stage profile.

Figure 26: Backfilled rock berms (before planting) create a meandering channel for the River Somer in its open culvert through Midsomer Norton (Photo: Luke Kozak)

This approach has also been taken successfully on the notorious 'Red River' Medlock in Manchester:

https://www.theguardian.com/environment/2013/oct/13/britain-lost-rivers

Areas of gravel, cobbles and small boulders of local ragstone could also be created, holding some of these rocks in place with bolts and resin to act as bed checks for other rocks to lock against. 'Slowing the flow' in such areas of 'pocket water' may help to mitigate low flows which have been identified as an issue under WFD.

Figure 27: Resin, Purbeck stone and rebar: raw materials for adding roughness to the Hogsmill River in south London: see https://www.southeastriverstrust.org/first-class-degree-in-fish-passage-at-kingston-uni/ for the full case study (Photo: SERT)

Figure 28: Bed check rocks in position in the Hogsmill River (Photo: SERT)

Figure 29: Introduced rocks and gravel create a range of habitats and flow dynamics in what was once a smooth concrete channel in the Hogsmill River (Photo: SERT)

Suitable LWM could also be introduced, and any trees or substantial branches which fall into the stream from the banks should be retained whenever possible. Their presence will contribute hugely to the ecological functioning of the Dodham Brook: promoting localised scour, deposition, and providing habitat for insects, birds and fish of many species.

In the downstream section of the channel, where it runs along the foot of Summerhouse Hill, it may also be worth investigating the possibility of breaking out the RB of the square culvert completely – making more space for natural morphology while not threatening the stability of infrastructure on the LB. This would also help to make public access easier, and facilitate local community engagement and ownership.

Given the sheer length of channel available for restoration on this site, it should be possible to test and trial a number of different approaches, roll out the ones which work best, and even generate future learnings for restoring similar streams in other urban areas.

Making It Happen

The creation of any structures within most rivers or within 8m of the channel boundary (which may be the top of the flood-plain in some cases) normally requires a formal Environmental Permit from the Environment Agency. This enables the EA to assess possible flood risk, and also any possible ecological impacts. The headwaters of many rivers are not designated as 'Main River', in which case the body responsible for issuing consent will be the Lead Local Flood Authority. In any case, contacting the EA early and informally discussing any proposed works is recommended as a means of efficiently processing an application.

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/index

There is also the possibility that the WTT could help via a Practical Visit (PV). PV's typically comprise a 1-3 day visit where WTT Conservation Officers will complete a demonstration plot on the site to be restored.

This enables recipients to obtain on the ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety, equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

Recipients will be expected to cover travel and accommodation (if required) expenses of the WTT attendees.

There is currently a big demand for practical assistance and the WTT has to prioritise exactly where it can deploy its limited resources. The Trust is always available to provide free advice and help to organisations and landowners through guidance and linking them up with others that have had experience in improving river habitat.

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.