Advisory Visit

Eastburn Beck, R. Aire

07/07/2015

1.0 Introduction

This report is the output of a site visit to the Eastburn Beck (Waterbody ID: GB104027062960), River Aire catchment, N Yorkshire, undertaken by Jon Grey of the Wild Trout Trust, accompanied by Pete Turner of the Environment Agency. The visit was requested by the Aire Rivers Trust to assess instream habitat potential following a focussed WTT AV 'Preliminary Assessment of weirs and connectivity (Eastburn Beck, Eller Beck and River Aire; 03/05/12) which was conducted by Paul Gaskell. His report noted potentially valuable reach-scale habitat improvements to the tributary (irrespective of attendant catchment-scale benefits) that would result from tackling the observed weirs; it is referred to throughout the current report and should be read in conjunction.

Normal convention is applied with respect to bank identification, i.e. left bank (LB) or right bank (RB) whilst looking downstream. Upstream and downstream references are often abbreviated to u/s and d/s, respectively, for convenience. The Ordnance Survey National Grid Reference system is used for identifying locations. The water level during the AV was noted from the most local Environment Agency Station (ID 8060) Eastburn Beck at Cross Hills – 0.13m.

The focus of the current report is a short (~1km) section between a weir at SE0072144453 (d/s) and a weir at SD9983144641 (u/s), approximately 40% of which flows alongside Lyndhurst Wood (RB).

In many ways, the beck is typical of a northern, post-industrial, spate stream, and has been clearly influenced by mills that have developed on its banks and used its water for various purposes. It flows alongside the villages of Eastburn, Glusburn and Cross Hills, together which currently house ~5000 people, so where access is available, it is a heavily used amenity, particularly for dog walkers through Lyndhurst Wood.

The Environment Agency consider Eastburn Beck as heavily modified. In 2014, it achieved an overall water body status of moderate (based upon an ecological quality of moderate, and a chemical quality of good), which has improved from a status of poor in the previous (2009) cycle.

2.0 Habitat Assessment

2.1 Eastburn Beck (walked from d/s to u/s)

The starting point of the walked section was at a footbridge which spans a weir (SE0072144453) and is at the d/s limit of Lyndhurst Wood on the RB (Fig 1). The weir is a severe obstruction to fish passage as it has a substantial sill of concrete on the d/s side, but this is beginning to degrade and a deeper pool has formed immediately beneath where some of the blocks of stone (upon which the concrete was laid) have been displaced. The pool contained 6-10 trout of 10-20cm. At the u/s side of the weir, there is a wooden beam spanning the beck which has several shallow grooves eroded into its surface creating flow diversity.

Fig 1. The weir beneath the footbridge spanning Eastburn Beck, below Lyndhurst Wood. Note the wooden lip u/s and the degrading concrete sill d/s. A scour pool where erosion has removed the concrete sill holds a water depth of >50cm, and trout were visible.

Immediately u/s of the weir, the impounded section inhibits the capacity of the beck to maintain natural alternating lateral scour and deposition processes. Consequently, the riffle-pool sequence is replaced by a single long, straight pool with a depth of only ~10cm as the bed above the weir has gradually built up with substrate. The beck is constrained on both banks by walling to a height of several metres in some places, and clearly has been straightened (Fig 2). Despite a variety of natural boulder, cobble and gravel sizes (along with some large hewn stone revetment blocks and irregular lumps of concrete comprising the bed), the channel is overly wide and water depth is shallow and uniform. There is a distinct lack of 'thalweg' (the line drawn between the lowest points of the stream bed; i.e. the deepest channel) anywhere in the cross-section that could act as a two-stage channel and thereby retain greater functional refuge during low flows. Many of the larger boulders and cobbles etc are proud of the surface, creating small areas of pocket water, and while there is limited instream habitat for trout fry and parr, adult habitat is severely lacking.

Fig 2. The weir beneath the footbridge spanning Eastburn Beck below Lyndhurst Wood. Ponding is evident immediately u/s of the structure but only ~10cm depth. Note the walled banks, straightened course, and exposed substrate

The mixed deciduous trees (beech, oak, sycamore, ash, with occasional holly and horse chestnut) of Lyndhurst Wood create a considerable mature tree canopy on the RB, and with recent windy weather, had introduced fresh leaf material into the stream which had formed numerous leaf-packs (Fig 3). However, cursory stone turning and inspection revealed no gammarid shrimps. Gallery building chironomids, cased caddis, and mayflies were evident.

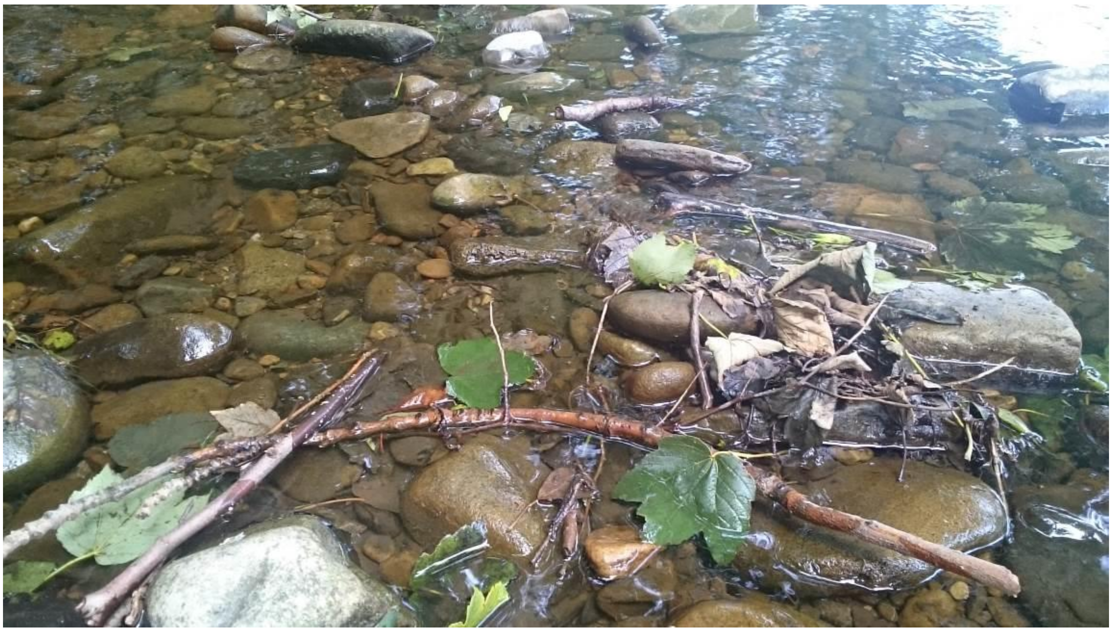

Fig 3. Abundant leaf packs should provide food for shredding invertebrates such as *Gammarus pulex*. Note shallow water depth.

The LB is more open as the beck borders some playing fields at this point. Where deciduous trees have taken hold amongst, and at the top of, the wall stonework they are clearly being managed / 'tidied' as there was evidence of cut branches being deposited into the river (Fig 4). Such management can have benefits but must be carefully considered to alleviate potential negative impacts; for example, allowing dappled light through to the beck bed and understory is good for biofilm or plant growth, but too much light will allow nuisance algae to develop if there are excess nutrients, and may lead to warming of water in low flow conditions. Also, overhanging and trailing/submerged cover is incredibly valuable to trout at all lifecycle stages. Such cover is often removed as a perceived flood risk even in the absence of any evidence of negative influences on the chances of floods. More detail is provided and summarised in the WTT fact sheet 'Managing trees' available at:

www.wildtrout.org/sites/default/files/library/Managing_Trees_Apr2012_WEB.pdf

The addition of woody debris, as in Fig 4, will greatly enhance the habitat both in terms of holding fish and invertebrates, but should be secured so it is not dislodged or removed by the next spate.

Fig 4. Cut branches of sycamore left in the beck from the pruned tree on the LB. This woody debris could form a useful refuge feature and food for invertebrates if retained (pinned) in such a position but is likely to be removed by the next rise in water.

Despite the walled nature of the banks, self-set trees have established (Fig 5). It is important to encourage these as they provide valuable low level cover for fish, as well as their roots adding to the structural stability of the bank.

Fig 5. Valuable, low-level cover provided by self-set trees but note insufficient depth of water with current channel form.

The more pliant species, such as willow or hazel, should definitely be left *in situ* to provide this important habitat function. These species can be managed to 'lay' along the channel by hinging the trunks, thereby increasing their effectiveness (see Recommendations).

The walling of both banks is clearly failing in a number of areas (Fig 6). This is desirable, in that it breaks up the monotony of a walled edge into small embayments and scours, and the wall material that falls into the stream effectively acts as large boulders. However, it will probably require careful consideration where any instream works are proposed.

Fig 6. At various places on both banks (here the RB) erosion has led to partial or total failure of the wall, creating improvements to an otherwise uniform habitat. NB the cut log was not pinned.

Such features are focal points for people / dogs to enter the water, but as a consequence they tend to be free of vegetation, heavily compacted when dry or a quagmire when wet, and will ‘gutter’ fine silt into the beck. Even without the influence of passers-by, these erosional points form small gullies for rainwater run-off; the slope through Lyndhurst Wood is quite substantial and as there is little understory vegetation (Fig 7), overland flow must be a considerable source of fine sediment.

Fig 7. One of the numerous paths and denuded understory on a steep slope to the beck; a likely source of fine silt ingress during heavy or prolonged rain.

The first of a series of simple step weirs is found at SE0017544488 (Fig 8). It appears to be a single narrow span of concrete which impounds a section of water ~40m u/s. It is deeper than the previous section (~30-40cm) but is fairly uniform in depth across the width of the channel and the substrate that has been deposited and retained by the structure is also quite uniform.

Fig 8. A concrete step weir which ponds a section of ~40m u/s, reducing flow variation and causing the formation of a uniform bed (and water depth) as substrate cannot migrate d/s.

The toe of the RB has been lined with a row of large boulders which 'roughen' the effect of the straight wall (Fig 9). They probably provide some limited refuge for small fish. If this section were not impounded, then the energised flow passing this roughened boulder line would create some important turbulence and probably scour, helping to increase bed (and hence depth) diversity (see Fig 10), but only if the thalweg reached the feature. The lack of energy in these impounded sections u/s of the weirs is evident in Figs 8 & 9: a fine silt coats the larger substrates.

Fig 9. Just u/s of a concrete weir, large boulders line the toe of the RB. Note the fine silt deposition on the cobbles and gravels, and the extent of the ponded reach.

Upstream of the impounded water, the beck has sufficient energy to sort the substrate, and a large exposed cobble and gravel bar constrains the flow to what is likely to be the appropriate channel width (~1/6th) for base-flow conditions; it is also notably deeper (~30cm) where it runs past the embanking boulder line (Fig 10). When small trout were disturbed in the barren ponded section, they immediately sought refuge in this deeper, narrower channel, further highlighting the lack of cover and refuge within the impounded section.

Fig 10. A more energised section of the Eastburn Beck where sediment deposition constrains the flow (mostly) to the RB and creates valuable flow diversity; as a consequence, the channel is narrower and deeper and offers secure lies for fish amongst the larger boulders.

The next deeper pool spans the channel width, formed by another simple concrete lipped weir (at SE0011844470) which has started to degrade near to the centre (Fig 11). A slab of concrete has been wedged up against that point and has been bedded in by deposited cobbles and gravel u/s but is starting to be undershot (see arrow in Fig 11). This structural weakness can be readily exploited (see Recommendations). Bed material within the pool has been sorted by the flow and turbulence and are free of fine silts, providing better habitat for a wider diversity of invertebrates, and potentially some spawning gravels. However, as the energy of the flow is dissipated across the entire channel width, the pool is short as the beneficial effects of the turbulence are only effective within a few metres of the weir. Where the channel is a more natural width, the accelerated flows would create more beneficial pool dimensions and maintain the bed free from sediments that can smother incubating salmonid eggs.

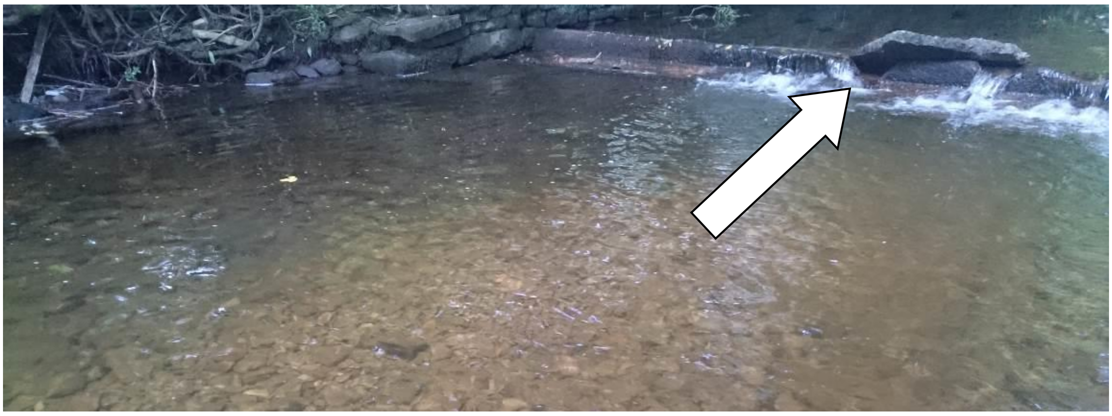

Fig 11. A scour pool, which spans the Eastburn Beck, caused by a simple concrete weir. The flow has sufficient energy to remove some fine silts and sort the substrate but only in the immediate plunge pool of the weir. Note the concrete slab wedged against a degradation in the sill, which is now being undershot (arrow).

The weir is impounding water and retaining substrate but the distance u/s that these negative impacts are felt is reduced by a bend in the channel which has forced flow to the outside (RB). Here, being constrained by the wall, it has scoured downward to create a deeper channel and facilitated deposition of a gravel bar on the inside of the bend (Fig 12).

Fig 12. A bend in Eastburn Beck has allowed geomorphology to regain some control of erosion and deposition of substrates above the weir, reducing the impact of impoundment.

A wide, unconstrained footpath runs immediately next to the walled bank (RB) at the impounded point, with considerable disturbance from walkers and dogs. Also, there is a lack of vegetative ground cover; the disturbance and exposure both increase the risk of sediment ingress. To the next weir around the bend, the instream habitat is much more varied, caused by blocks and boulders eroded from the weir and mill race, and there is lower overhanging bankside vegetation, especially on the RB as the path veers away from the edge (Fig 13). However, the flow still spans the majority of the channel and is too shallow to hold larger fish.

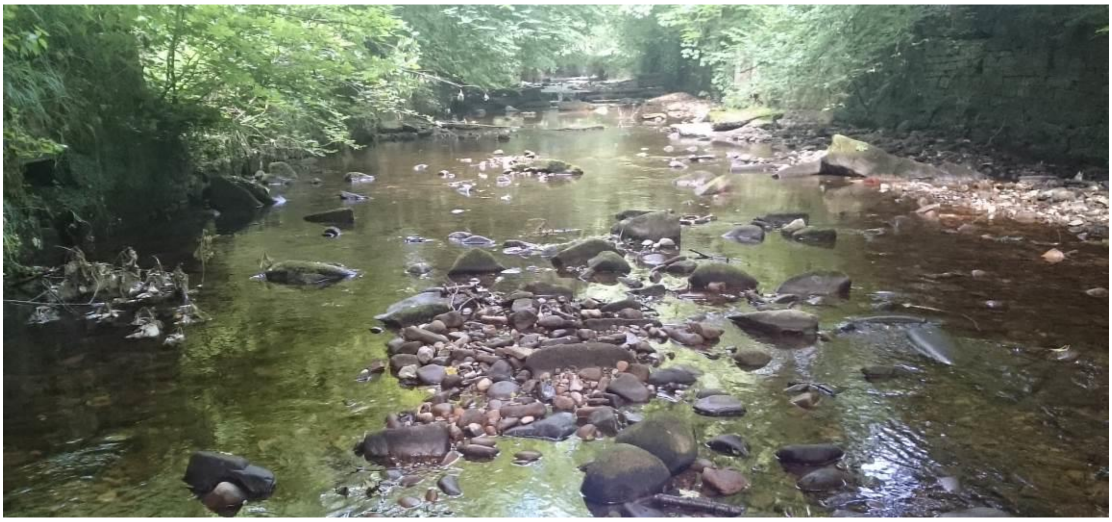

Fig 13. A better mosaic of instream habitat and overhanging vegetation, but the water depth is still too uniform and shallow.

The weir (at SE0003744506) is narrower than the previous structures as there is a dilapidated mill sluice to the LB. A substantial bank of gravel has accumulated in what would be a back eddy from the mill sluice wall under higher flows. This currently helps to constrain the channel width for 3-4 metres.

Fig 14. The weir and sluice. Large stone slabs provide instream features, and will diversify flow. Note the deposited gravel in the lee of the defunct mill race and sluice.

There is also a considerable number of concrete and stone slabs and blocks strewn about the pool which will provide refugia and cause turbulence around them when sufficient water is flowing. Indeed, so much so, that the wall on the RB appears to have succumbed to erosive power diverted by a particularly large slab; the hole would be much worse if it were not for the roots of the riparian trees (Fig 15). Similarl to the situation shown in Fig 6, this does not require repair, but the footpath should be diverted away from this point, or at least access from the bank side should be restricted with fencing. This would allow more understory vegetation to grow and stabilise the earth in the immediate area, otherwise the mature riparian trees d/s will be lost in future spates.

Fig 15. Erosion of the RB wall exposing the riparian tree roots. This is likely to have been caused by spate water deflected by the stone slabs centre shot.

Again, such a simple weir has a dramatic effect u/s, impounding and levelling the bed substrate to a uniform depth (Fig 16). Combined with a lack of buffering on the RB, that bed substrate is smothered with a layer of fine silt, and there is no low hanging vegetation to provide cover or refuge for fish.

Fig 16. The impounded section above the weir and sluice is essentially featureless. The arrow highlights the route of sediment ingress as there is no understory vegetation on the compacted earth beyond the wall, and the slope of the land is considerable at this point.

The u/s end of Lyndhurst Wood is marked by a two-stage weir comprising two single wooden beams spanning the channel and pinned onto concrete (Fig 17). The apron between these is probably concrete bed, but has some natural substrate on top. The water depth throughout the structure is very shallow at base-flow and hence it is a major obstacle to fish passage, particularly in low and medium flows.

Fig 17. The weir comprising two single wooden lips pinned to concrete at the u/s end of Lyndhurst Wood.

Immediately d/s on the RB, the wall has failed and a large embayment has formed. Erosion is occurring from both sides: spate flow is undermining the remaining walling and roots of the riparian trees (as in Fig 15), while people and dogs clearly use this breach to access the beck and their activities are leading to gullies and compaction from the landward side (Fig 18). Soil from the woodland paths are likely to be focussed here and enter the beck.

Fig 18. A break in the wall (footings still visible) immediately d/s of Fig 17 on the RB. Erosion is being severely exacerbated by people and dogs entering the beck here.

Beyond Lyndhurst Wood, the land use on the RB opens to pasture and there is a good buffer strip of mixed herbaceous vegetation providing a 'shaggy' edge to the beck; the wall may be considerably lower or absent here (Fig 19). The extra light reaching the LB has allowed vegetation to colonise the wall footing and there is a much greater low-lying cover for fish. While the water against the LB is deeper as more flow pushes to that bank, the wetted channel is still too wide and requires constraining. However, it is promising that the course of the beck is more sinuous in this section.

Fig 19. Looking u/s from the extent of Lyndhurst Wood. The RB (left of pic) is much more natural and the LB has lower vegetative cover probably because of light.

A defunct concrete bridge spans the beck at SD9991344610 and beneath it lies a concrete step weir, below which is a wide apron of >1m. One patch of erosion has occurred midstream, within the apron, and that feature was holding a small trout (Fig 20). The ponding u/s is considerable and clearly seen in Fig 20, and because of the lack of canopy and flow, the bed substrate was smothered in algae and silt, indicating that natural nutrient concentrations are being augmented by point or diffuse sources u/s.

Fig 20. The concrete step weir and apron at SD9991344610. The arrow points to the erosional feature where one small trout lay. Note the severe ponding u/s.

Approaching the final weir at SD9983144641 (the u/s limit that was walked), the beck takes on its most 'natural' proportions under the observed base-flow. A substantial deposition of bed substrate against the LB has become colonised by willowherb and other tall herbaceous vegetation which has helped to consolidate it (Fig 21). This feature may be as a result of the large undershot scour from the degraded weir u/s. Gaskell had previously noted the deposition of high quality spawning gravel habitat thrown up by the scour at the tail end of the weir pool. This is still in evidence.

Fig 21. A consolidated bar of substrate has developed, constraining the base-flow to the LB at a more appropriate channel width. It also runs deeper under the bankside vegetation (cover).

3.0 Recommendations

There is good potential to enhance the habitat and hence the fish holding capacity and other wildlife of this relatively short section of Eastburn Beck with some simple and cost effective instream works. While the scale is small, the benefits will be maximised and contribute to the longer term, overall aim of restoring connectivity throughout the broader catchment thereby creating a positive impact upon multiple water bodies. It will benefit considerably also from some low impact management within the riparian, particularly Lyndhurst Wood. Since this is managed by the Woodland Trust, and as that area is heavily used by the local community, it will be important to engage with the former and include due consideration of local interests. Any proposals should be made publicly available to allow for consultation and input.

The majority of the proposals here are to enhance or restore the beck under low to base-flow conditions. None of what is proposed will impede spate flow which quickly overtops many of the weirs anyway.

3.1 Weirs

Weir removal markedly benefits connectivity. It is important to remember that this is not solely for substrate and fish (and other biota), but also habitat variety (and consequently quality), water quality and potential flood risk due to reduced impoundment within the channel.

Gaskell has already made initial appraisals of each of the weirs considered here (and more) in his report in 2012; here, no additional recommendations for weir modifications are made. In essence, the best all round solution would be complete removal of any redundant weir structures to allow geomorphology to naturally reshape the channel to the benefit of the beck's ecology.

If this is not feasible, then adapting the simplest solution Gaskell advocated in most cases, to cut a channel or slot 1 – 2m wide down to the current d/s bed level, would be highly beneficial. Each slot should be wide enough to largely remove the upstream impounding effect of each structure. As some of the weir lips are wooden, this should be relatively easy to achieve. A number of the concrete lipped weirs already have degraded notches which could be exploited and 'encouraged' to degrade further. Each slot should be sited anywhere within the central third of the structure so that it does not unduly influence bank (wall) erosion. Focussing of the flow within one area will aid bed scour to form deeper pools (for refuge and to hold larger fish) and gravel sorting (thereby augmenting spawning habitat). It should be noted that Gaskell also suggested the physical destruction of parts of the aprons to allow fish sufficient water depth to access the base of the weir.

If the impoundment effects essentially can be removed by cutting a sufficiently wide (off-centre) slot in the weirs then there is merit in retaining/forming point-bar structures from the remaining weir structure left in place. The exact proportions of the beck (i.e. distance between weirs) needs to be assessed but if the slots were introduced toward a different bank on alternate weirs, then it should promote a more natural sinuosity within the channel which will be retained at base-flow. The result will be a narrower but deeper channel at base flow which maintains sufficient energy to keep the gravel matrix clear of fine silts, and the increased depth of water will allow a greater size range of fish to be retained throughout the year.

Any broken stone or concrete material removed from weir structures should be retained instream to augment the valuable boulder / pocket water habitat that is already developing.

3.2 Encouraging further channel sinuosity & bed heterogeneity

Currently, base-flow water level is spread across the entire trapezoidal channel for long reaches in most sections; it is, therefore, too shallow in the pool sections as the flow energy is dissipated across too wide a cross-section to scour or sort the bed substrates. Hence, the wetted channel width and the deposited bed substrate (an aggregated mixture of fine sands, silt, gravels and cobbles with occasional boulders) are too uniform. A naturally diverse channel should vary in both width and depth.

The mix of particle sizes and lack of sorting means that there is very little potential for gaps to exist between larger, ill-fitting substrates, particularly the smaller (10-40mm) gravels which are important for invertebrates and trout spawning. Such gaps in the substrate matrix (that must remain free of sand or silt blockages) are vital if eggs laid within a gravel mound are to be continually irrigated by oxygenated water. Without irrigation, trout eggs will suffocate. Therefore, it is important to retain sufficient energy within the channel to create natural glides, riffles and pools which maintain 'clean' gravel by scouring. The constant impoundment of the beck at present is preventing or compromising these features.

The removal or slotting of the weirs recommended above should kick start a process of re-naturalising and reverting the channel in the impounded reaches to a more sinuous form after one or two spates (as in Fig 12 & 21). However, it may be possible to facilitate this process and reintroduce cross-sectional variation in both physical structure and current flow by deliberate installation of LWD in a staggered, alternating pattern on both margins. Additional benefits arising from such structures are improved cover and trapping of leaf litter, providing a greater degree of insurance against excessive predation of nascent fish populations and boosting production of invertebrates.

This could be achieved by introducing a series of cabled 'tree kickers' or trunks securely pinned next to the wall banks, which are essentially mimics of natural tree fall organised to maximise habitat potential (Fig 22). Arranging these in an alternating, staggered fashion will promote meandering flow, whilst arranging in a matching pair on opposing banks will achieve a degree of channel pinching or narrowing. Both alterations to the flow are desirable and should be considered where possible to augment any remaining weir structures.

Fig 22. A tree kicker (or trunk / log depending upon effect scale required) laid parallel to the bank to narrow the channel, introduce scour and sinuosity, and retain substrate d/s and toward the bank side. It should become embedded over time.

LWD deflectors may eventually become consumed naturally by the deposition of bed substrate. However, their physical presence will still be deflecting flows, something which is severely lacking at present.

3.3 Riparian management of vegetation

The canopy afforded by Lyndhurst Wood on the RB is mostly from mature trees and shades the majority of the beck, especially where opposed by overarching trees from the LB. Whilst it is an important source of energy to the beck in the form of leaf litter and smaller woody debris, currently it is too dense and along most of the wall on the RB at least, there is no understory of herbaceous vegetation, leaving soil exposed to compaction from walkers, and erosion and overland flow leads it directly into the beck.

In conjunction with the Woodland Trust, it would be beneficial to instigate some tree management to remove some or parts of the mature trees to allow younger trees to develop in the gaps, thereby increasing heterogeneity in canopy age / structure. This would allow dappled light into the stream bed, promoting photosynthesis there, as well as giving the understory a chance to better stabilise the soils. It will be important to retain root structure, living if possible, by coppicing. Low growth should be encouraged to provide overhanging cover, especially to coincide with deeper water approaching the banks (if sinuosity can be achieved).

To promote the growth of an understory buffer strip, temporary fencing will be required to protect it from trampling by walkers and dogs. It is hoped that via prior consultation and engagement with the local community, e.g. a noticeboard of intended restorations and / or talks at local forums, then the benefits will be realised and such structures will be accepted. It is not intended that the buffer strip ultimately blocks the view of the beck, nor prevents access, but it will require some sensitive management to achieve the desired results, i.e. a more stable bank and a buffer that provides a) shelter and food for riparian animals, and b) protects the beck from soil ingress. Figs 23-25 exemplify the damage that is occurring and a small piece of buffer already in place.

Fig 23. A view of the beck from the path where the wall has been breached, and severe guttering and compaction of the bare soil is occurring. If this continues, the tree with exposed roots in the foreground will soon be lost.

Fig 24. The eroded bank viewed from the footpath that was previously viewed from the beck in Fig 15. The path is undercut, a danger in itself to walkers, and will continue to erode from both sides unless mitigation measures are put in place.

Fig 25. A small parcel of riparian herbaceous vegetation and young ash and sycamore trees that have managed to establish where light from the mature canopy allows, and the path has not encroached to the bank wall. This should be encouraged along much more of the RB but requires management so it does not prevent views of, nor denies access (at certain points) to the beck.

Better light access to the toes of the walls will also encourage vegetation to grow as it does u/s of the shading influence of Lyndhurst Wood (e.g. Fig 26), thereby providing better cover for fish, especially emergent fry, and extending the safe feeding lies of larger individuals further into the channel. A simple adaptation of hedge laying techniques to 'hinge' bankside scrub vegetation into the margins of the stream where the depth is around 30 cm or less would quickly and easily achieve this.

Fig 26. Low overhanging vegetation with trailing branches are excellent holding habitat provided there is sufficient water depth beneath.

3.4 Invasive species

Himalayan balsam was present at low density at the most u/s site visited. Whilst all of it that was observed to be flowering was removed during the AV, clearly the source must be higher up the beck and should be tackled through a co-ordinated catchment approach from the upstream extent, then working downstream. Note that if the proposed riparian management lets more light onto the banks throughout Lyndhurst Wood, it is likely that balsam will establish there where it is currently absent.

Signal crayfish were caught by hand when stone turning, and were observed walking around the deeper pools below weirs throughout the entire walked stretch (Fig 27). Clearly the weirs do not constitute any form of preventative barrier to their dispersal. There is currently no effective eradication method. It might be worthwhile placing signage, advising of the impacts of these crayfish, asking the public not to move them around the catchment and informing them that it is a criminal offence to do so.

Fig 27. Mature and juvenile signal crayfish were observed throughout the walked stretch of Eastburn Beck.

3.5 Fish populations

Brown trout were evident in every section between the impounding weirs but were mostly small individuals (8-15cm) emphasising the fact that there is little holding habitat for larger / adult individuals. Only one larger individual of ~30cm was observed. Improving the habitat quality and its connectivity via the recommendations above has the potential to markedly increase the density and size range of resident wild trout. Anecdotal information gleaned from local residents during the course of the AV indicates that larger individuals ~40cm are seen and caught upstream, particularly where the Cowling Beck joins Eastburn Beck.

Bullhead appeared to have a healthy population, as one individual was observed beneath each of four larger stones overturned.

More information on the measures discussed and many other enhancement and restoration techniques can be found in our various publications on the Wild Trout Trust website, under the library tab (www.wildtrout.org/content/library).

4.0 Making it Happen

The WTT may be able to offer further assistance:

- WTT Project Proposal
  - Further to this report, the WTT can devise a more detailed project proposal report. This would usually detail the next steps to take and highlight specific areas for work, with the report forming part of a land drainage consent application.
- WTT Practical Visit
  - Where recipients are in need of assistance to carry out the kind of improvements highlighted in an advisory visit report, there is the possibility of WTT staff conducting a practical visit. This would consist of 1-3 days work, with a WTT Conservation Officer teaming up with interested parties to demonstrate the habitat enhancement methods described above. The recipient would be asked to contribute only to reasonable travel and subsistence costs of the WTT Officer. This service is in high demand and so may not always be possible.
- WTT Fundraising advice
  - Help and advice on how to raise funds for habitat improvement work can be found on the WTT website - www.wildtrout.org/content/project-funding

The WTT officer responsible for fundraising advice is Denise Ashton: dashton@wildtrout.org

In addition, 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

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 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.

6.0 Disclaimer

This report is produced for guidance only; 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.