Advisory Visit

Exning New River, Suffolk

January 2020

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Key finding

- The reach of river focussed on in this Advisory Visit (AV) is not suitable to support a sustainable brown trout population due to:
  1) The low flow (and total loss of flow on occasions)
  2) The lack of suitable spawning gravels
  3) Poor in-channel habitat (often due to impoundments)
  4) Lack of connectivity to lower reaches.

- The river is overwide in many places. Narrowing it down could result in an increase in water velocity, resulting in a scouring of the bed, but only where the river has gradient (i.e. not where it is impounded).

- Some impoundments should be removed (such as the weir near Brookside), but others retain amenity features such as the duck pond. The mill impoundment has resulted in a long length of river with deep silt. Operation of the mill's sluices may enable some of it to be flushed out, but regard must be had to downstream habitats that could be damaged by smothering silt.

- Upstream of the A14 the river is prone to drying out. No interventions are recommended and the area of wet woodland should be left in a natural unmanaged state.

- The fishpond is drawing water from the river. The river has a limited amount of water and the volume lost to the pond is likely to be detrimental to the river's flow.

- Where the river has flow, it may be possible to plant-out water crowfoot in order to establish aquatic plants which in turn provide cover, create flow diversity and hold back water.

- The presence of water voles is of county importance and the New River Group should contact the Suffolk Wildlife Trust's Water for Wildlife Project Officer to discuss how the species' conservation can be improved on the river.

- Members of the Exning New River Group should walk the entire river to gain more information about potentially good areas of habitat and possible barriers to fish migration.

1.0 Introduction

This report is the output of a site visit undertaken to the Exning New River by Rob Mungovan of the Wild Trout Trust who was accompanied by Jenny Ricketts (Exning New River Group), Amanda Mumford (EA Technical Officer, Hydrology & Operations) and Ellis Selway (EA Geomorphology Technical Specialist). The visit was undertaken on the 16th January 2020. Comments in this report are based on observations made on the day.

The purpose of the visit was to advise on the suitability of the river for wild brown trout, and to consider measures that could be implemented to improve habitat for them.

Normal convention is applied throughout the report with respect to bank identification, i.e. the banks are designated left bank (LB) or right bank (RB) whilst looking downstream.

2.0 Catchment Overview

Table 2 summarises the Water Framework Directive (WFD) data for the New River, with an overall classification of 'moderate' ecological potential for a highly modified watercourse. Parameters that make up the classification include 'good' for macrophytes and phytobenthos, 'high' for invertebrates and 'does not support good' for hydrological regime. The river's hydrological regime is of particular importance as the river is fully supported by an EA groundwater support borehole which provides compensatory flow to mitigate the effect of low-rainfall and groundwater abstraction. The river ran dry at Christmas 2019 due to a failure of the pump. It should be noted that although the autumn leading up to December had seen notable rainfall the chalk aquifer has not been replenished.

The New River is a very small chalk river with a width of little more than ~2m when left to flow naturally (i.e. not impounded). The river's length is 9.5km but that is likely to be reduced when spring flow fails and the river above the EA's groundwater support outfall runs dry. No fish were seen during the visit, yet a shoal of fish had been reported in the summer (possibly introduced roach or dace). Small fish are occasionally seen and are likely to be a stickleback species. The river is not used for angling.

The New River rises from chalk springs south of the village in an area known as St Wendred's Well (and Seven Springs). The river flows in a northly direction through the village of Exning in an artificial channel presumably

created to drive a watermill on the north of the village. The river's course is generally straight and uniform.

The length of river walked in Exning is classified as an Ordinary Watercourse (not Main River) and its jurisdiction falls to Suffolk County Council as the Lead Local Flood Authority (LLFA). The river becomes Main River downstream of Landwade.

	Waterbody details
River	Exning New River
WFD Waterbody Name	New River
Waterbody ID	GB105033042780
Management Catchment	Cam and Ely Ouse
River Basin District	Anglian
Current Ecological Quality	Overall classification of **Moderate** potential for 2016
U/S Grid Ref inspected	TL 62263 64851
D/S Grid Ref inspected	TL 61884 66092
Length of river inspected	1.5km

Table 1 Data from https://environment.data.gov.uk/catchment-planning/WaterBody/GB106039023300

Cycle 2 classifications

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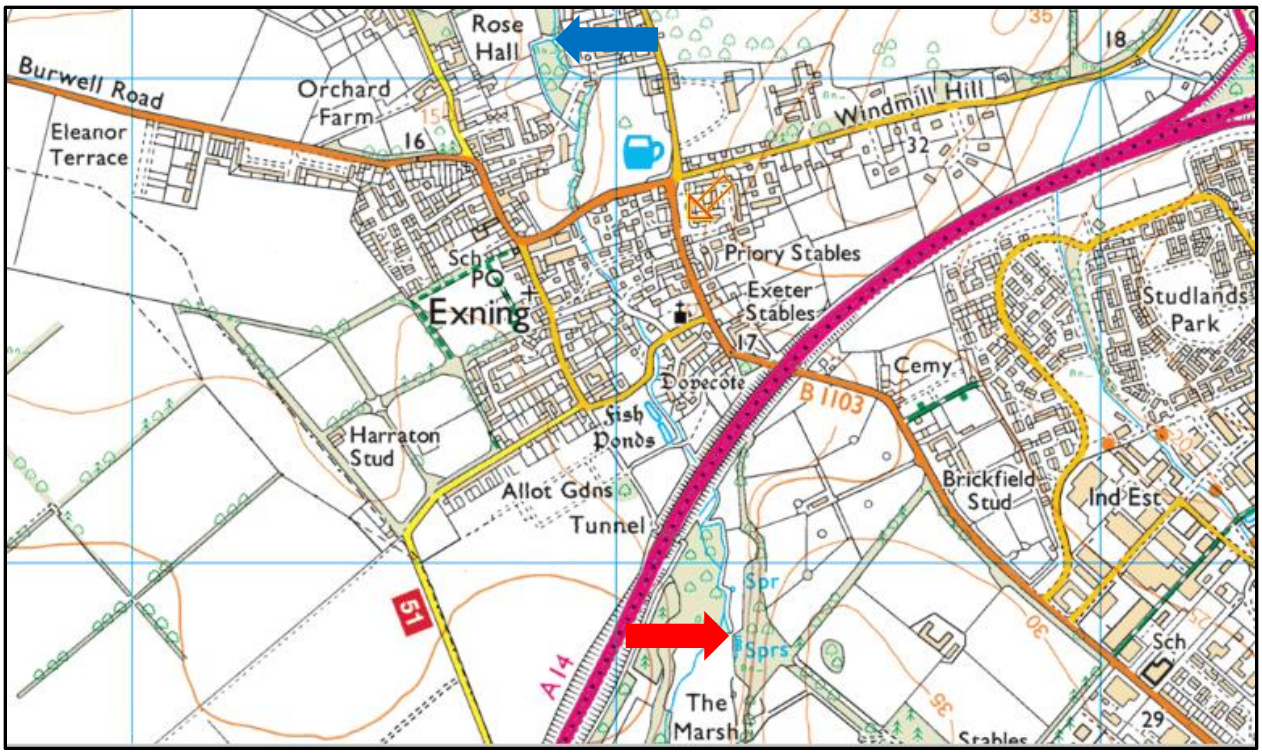
Classification Item	2013	2014	2015	2016
Overall Water Body	Moderate	Moderate	Moderate	Moderate
Ecological	Moderate	Moderate	Moderate	Moderate
Supporting elements (Surface Water)	Moderate	Moderate	Moderate	Moderate
Biological quality elements	High	High	High	Good
Macrophytes and Phytobenthos Combined	-	-	High	Good
Invertebrates	High	High	-	High
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good
Hydrological Regime	Does Not Support Good	Does Not Support Good	Does Not Support Good	Does Not Support Good
Physico-chemical quality elements	High	High	High	High
Ammonia (Phys-Chem)	High	High	High	High
Dissolved oxygen	High	High	High	High
pH	High	High	High	High
Phosphate	High	High	High	High
Temperature	High	High	High	High
Specific pollutants	High	High	-	-
Chemical	Good	Good	Good	Good

Table 2 Data from https://environment.data.gov.uk/catchment-planning/WaterBody/GB105033042780



Map 1 – The Exning New River. Red arrow is upper limit, blue arrow is downstream limit of visit © Streetmap.co.uk scale 1:2500

3.0 Habitat Assessment

The visit started at one of the upper set of springs. The springhead was damp but not flowing. Inspection of the leaf litter revealed an absence of *Gammarus* sp. shrimp and cased-caddis. It is likely that the springhead ran dry during the recent drought resulting in the loss of some invertebrate groups, and only since the rainfall of October 2019 has water returned to the upper reaches of the river. The Newmarket area is known to be one of the driest areas in the country. With low recharge rates, and an increasing demand for water from ground water abstraction, the return of natural flow to the New River is unlikely given the present situation.

Pic 1 – One of the springheads of the river, the damp ground was not flowing.

After emerging from the springhead, the river flows through an ecologically interesting area of wet woodland. Common alder trees grew in partially submerged conditions with ash on the drier ground. Many of the trees were unmanaged giving the area a wild feel (pic 2). The river was partially shaded, where the canopy broke, lesser pond sedge and lesser water parsnip were present. No intervention is recommended in this area, as the value of the wet woodland as a whole is more important than the river itself, to undertake work to improve flow within the channel is considered to be cost-prohibitive. It was apparent that the river had been dredged in the past as a levee prevented water from spilling out on to an adjacent meadow (pic 2, inset pic). If the catchment were wetter, it might be worth investigating reconnecting the river to its historical floodplain, however the adjacent meadow showed no signs of water-logging and there is a significant risk that any rewetting of the floodplain might further diminish flow in the river. A representative from the Jockey Club was present for this reach of the visit, he was able to confirm that no management takes place at this location and that it is unlikely to happen in the future.

Pic 2 – The river flows through an ecologically valuable area of wet woodland. Inset pic shows a levee (red arrow) adjacent to the river.

The lack of flow, combined with a low gradient, affects the river's ability to transport fine sediment. Consequently, the river has become over-laden with silt and organic matter. Fine sediment has a negative impact upon a river's invertebrate production by reducing the number and diversity of niches available within the gravel bed. Importantly, trout need clean and stable gravel (particularly in the size range 10-40mm) to spawn upon. With their eggs remaining in the gravel for up to 100 days before completing incubation and development from alevins to fry, trout eggs are very susceptible to mortality from siltation or physical disturbance.

The problem of siltation is further compounded by the river having been canalised (the process of cutting a specific channel to create a defined channel, as opposed to a collection of small streams and seepages that may have once flowed across the landscape) at some point in its history. Diminishing flow in an over-wide artificial channel restricts the river's ability to transport fine sediment. The river is becoming a settling pond for fine sediment with no ability to deposit it upon its floodplain.

Pic 3 – The river shows little ability to transport fine sediment, consequently it is prone to excessive silt loading.

The location of the EA's groundwater support borehole was observed, with the water discharging and creating a local area of high energy flow which quickly dissipated. Immediately downstream of the outfall the river had a slight increase in plant diversity with willow moss present amongst reed sweetgrass and occasional great willow herb in the margins. There were patches of clean gravel and it was reported that small fish (most probably a stickleback species) were seen in the summer. The bed had firm gravel and occasional larger stones. Stones were turned to assess the general health of the river. Sadly, no *Gammarus* sp. shrimp were seen, no bullhead fish found, and the stones were mainly sheltering flatworms and hog louse; both are groups that can tolerate low oxygen levels and high organic loading.

Pic 4 – The EA's groundwater support outfall (blue arrow) and the culvert beneath the A14.

The river flows beneath the A14 in a wide corrugated metal culvert sunk beneath the riverbed which has been backfilled with gravel. A short way into the culvert, the river was silting up due to its overwide form. Ironically, it is possible that the over-deep nature of the culvert acts as a pond habitat, with shading to maintain cooler water temperature, thus enabling small fish to survive when the EA's pump occasionally fails.

Downstream of the A14 the river has been widened to ~6m and it is influenced by an impoundment at Ducks Lane ~220m downstream. A tall hedge with occasional trees lined the LB and is likely to cast significant shade, as such the marginal vegetation was poor (pic 5). The RB supported marginal great willow herb but then gardens become the predominant habitat.

The gardens have used various means to strengthen their banks from concrete, through to modern plastic membranes (see pic 5 inset). The river was over-wide with a very slow velocity. The river contained a very high volume of fine silt with no gravel seen. The smothering of the bed by dense silt, a very low velocity flow and no clean gravel bed for spawning upon makes this reach and those above it completely unsuitable for brown trout. The impounded flow only compounds the problem.

Pic 5 – The river downstream of the A14 is overwide and impounded. Where gardens back-on to the river hard bank revetments are the usual inappropriate means of bank treatment.

Adjacent to the river is an historic fishpond. The pond has been thoroughly cleaned out in recent years with dredged material placed around the pond forming bunds. It was important to note that the pond was drawing water from the river, but did not appear to have an outfall back to the river. Thus, the pond represents a leak point for the river. Whilst the proportion of flow lost to the pond might appear insignificant every drop of the groundwater support is required in the river unless the pond is deemed more ecologically valuable (such as sustaining water voles) than the stream. Whilst the pond has historical interest, and was reported to never dry up, on the day of the visit it did not appear to have any great ecological value. There were no aquatic plants and very limited marginal flora. It is highly probable that the pond acts as a habitat for the river's duck population and it is their constant feeding and dabbling that has restricted plant growth and led to the pond's turbid appearance. Also of note was the occurrence of a disused crayfish trap. If signal crayfish are present then the pond may be acting as a reserve habitat for them, aiding their survival through dry periods. The crayfish will be causing degradation of the pond's environment and will cause disruption of the river's ecosystem if their population establishes high numbers within the river.

Pic 6 – The fishpond which draws water from the river.

At Ducks Lane the river has been widened to form a duck pond, and is impounded by the road bridge (with a width ~1.2m). Past habitat improvement work had seen a small naturalistic concrete weir created to retain more water. Channel narrowing has also been undertaken at the inflow to the pond, but that work has now degraded due to ducks and shading affecting plant growth required to stabilise the structures. The previous channel narrowing is ineffective due to the impounded and diminished flow not providing the water velocity and scour that was desired.

Pic 7 – The river has been widened in the village to form the duck pond (of Ducks Lane).

The pond has limited stands of marginal vegetation. Of most ecological value is a large stand of lesser pond sedge. A water vole was seen, and it is probable that it had created a nest within it or had found an area of unprotected bank to burrow into.

Pic 8 – The stand of lesser pond sedge which represents important habitat for water voles in an otherwise sparse environment.

An objective of the visit was to conceive a habitat enhancement project for the Ducks Lane area. However, several important issues need to be considered. The river's flow is now intermittent and much reduced, thus to initiate the bed scour intended by narrowing down the river, even further narrowing would be required than was done previously. But it is unlikely that narrowing would produce the desired results due to the pond's impounded flow. Removal of the impounding weir would increase water velocity, but it is unlikely to be very significant due to the impounding effect of the road bridge, And, if the weir is removed the consequential loss of water level in the pond would result in the ducks causing greater disturbance to the riverbed as their dabbling would reach more plants and their feet would constantly mobilise fine sediment in the shallow water. Loss of the duck pond is very likely to cause upset in the village and turn people off from river conservation if they perceive it as leading to the loss of a cherished village feature. The underlying problem is one of lack of river flow and gradient, which in turn reduces bed scour and limits fine sediment transport.

Pic 9 – The road bridge of Ducks Lane holds water back within the pond, and a concrete and stone weir has been constructed to retain a greater head of water.

After the impounding road bridge of Duck Lane, the river ran with a degree of gradient and consequently the bed was cleansed of the fine organic sediment and showed the chalk bed (albeit generally dominated by fine chalk particles). The river was ~2m wide and ~0.1m deep. The only marginal plants were marsh marigold. This reach may also be impacted by the ducks and/or affected by shade. Nevertheless, the increased water velocity might just be enough to sustain water crowfoot if it was introduced. Water crowfoot provides important physical structure for retaining a head of water, creating flow diversity, increasing cover, as well as habitat and food for numerous invertebrate species. The plant is typical of clean, swift-flowing rivers.

If the flow is not enough to sustain water crowfoot then consideration should be given to introducing other aquatic plant species such as starwort, water milfoil or possibly curled pond weed. It is certainly better to have some aquatic plants than none. The impact of duck grazing upon the plants should be assessed.

Pic 10 – At the Old Rectory the river ran relatively swiftly and showed a bed of chalk particles.

The river was viewed upstream of Church Lane, its gradient had been lost and it was filling with fine organic silt again. It was interesting to note the small width of the culvert (~1m wide) running beneath the road. The small size suggests that the river has never been prone to flooding (none were known for the village) and/or that the flow of the river has never been very large.

Pic 11 – The river in Church Lane had no habitat to sustain trout nor water voles. Note the recently installed toe-boards.

The cause of the build-up of silt at the Church Lane bridge is a weir immediately downstream of the Brookside road junction. The weir retains a head of water ~0.15m but it has impounded flow for ~80m.

Pic 12 – A further weir is present at the end of Church Lane.

Weirs, sluices and mills disrupt the natural process of sediment transport along a river and act as sediment traps. They degrade habitat by inhibiting natural riverine processes, and create habitat uniformity to the detriment of river ecology (see illustration 1).

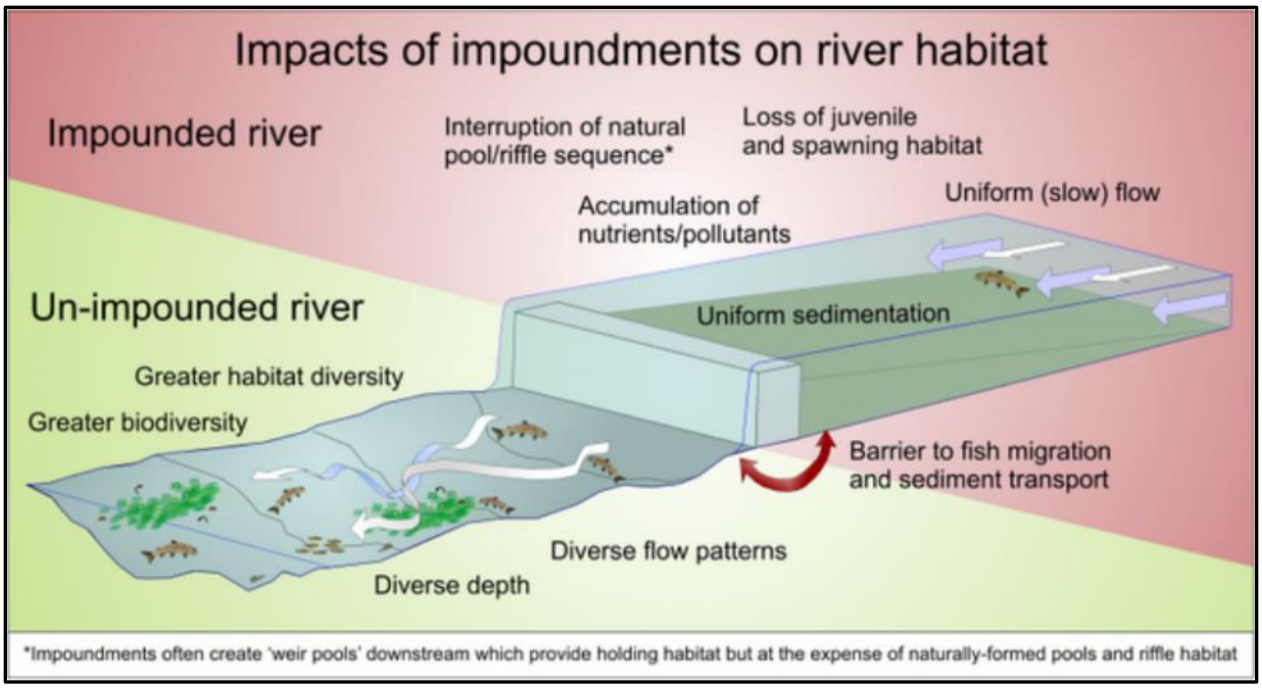


Illustration 1: The impact of a weir on river habitats.

As the river flowed downstream of Brookside towards New River Green it formed a boundary to many residential properties. Sadly, all properties have protected their banks using hard engineering approaches (wooden toe-boards, stone-filled gabion cages and even brick and paving stone combinations). For such a low-energy river these approaches are vastly over-strengthening the banks. More importantly the works have totally disconnected the river from its riparian environment, there was no graduation from land to water, which makes it hard for marginal plants to find their niche. The presence of marginal plants along a watercourse is crucial; plants provide cover and food for a wide range of invertebrates which in turn sustain birds, mammals and fish. Plant roots within a riverbank bind soil particle aiding bank strength, controlling fine sediment input and adding hugely to the natural beauty of the river corridor.

Pic 13 – The river after Church Lane, the channel is devoid of any plants, the left bank is supported by gabions and the right bank by new toe-boards. Both means of bank stabilisation degrade the river.

The occurrence of water voles on the New River requires the legal protection afforded to them to be taken into account. Water voles, and their habitat, received legal protection in 1998 through inclusion in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole;
- possess or control a live or dead water vole, or any part of a water vole;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place;
- sell, offer for sale or advertise for live or dead water voles.

Water voles are also a species of principal importance under the Natural Environment and Rural Communities (NERC) Act 2006, and local authorities and other public bodies (such as parish councils) have a legal duty to take their conservation into account. They are also a material consideration in the planning process which should seek their protection and further enhancement (and control development adjacent to watercourses).

It would appear that the water voles' presence on the New River, and its importance, needs to be publicised to riparian owners.

Immediately before New River Green bridge the river has been widened to create another pond-like area. It was reported that until recently it contained an island which had be planted with common reed. The common reed had become too dominant for the narrow river and it was dredged out by Suffolk County Council. The over-wide channel is now silting up again. Fortunately, the banks remain in a natural state and supported some of the densest marginal growth on the river. It is very probable that water voles reside in this area.

Pic 14 – The river at New River Green. The natural vegetated banks are likely to provide important water vole habitat and must be retained.

The river downstream of New River Green has the appearance of a long shallow pond. Unfortunately, the in-river habitat is very poor and marginal habitat has been lost to insensitive bank protection. It was interesting to note that kingfisher perches had been erected so one can assume that residents enjoy some of the visiting wildlife. Kingfishers would be more frequent visitors if the river's habitat was more diverse and the flow not impounded.

Pic 15 – The river downstream of New River Green.

Moving downstream, the river was accessed via a small industrial estate off Swan Lane. Although the river had a building upon its LB, natural banks were retained elsewhere and provided important water vole habitat. With respect to the river itself, it was still vastly overwide at ~6m with an impounded flow. Approximately 4m upstream of the Swan Lane bridge evidence an old water-retaining board was observed. However, it was drowned-out indicating that the current impoundment is from further downstream.

Pic 16 – The river at Swan Lane industrial estate is overwide and impounded but does at least retain areas of vegetated banks.

Pic 17 – The previous water-retaining board is now drowned-out by a further impoundment downstream.

Pic 18 – A search amongst the riparian vegetation produced a chewed stem with the water vole's characteristic angled bite mark.

The walk continued into the private grounds at Regal Lodge. The river was extensively tree-lined by horse chestnuts, and the adjacent land was a well-established formal garden with much of it appearing to be beneath the level of the river. Interestingly, the garden did not appear to suffer from water logging (i.e. there was no bog garden nor ornamental willows), indicating the general dry nature of the land adjacent to the river.

Inspection of the reach found 2 weirs. The first was a short distance downstream of the Swan Lane bridge and retained a head of water ~0.1m. It is responsible for the impounded flow at the Swan Lane industrial area.

Pic 19 – This weir is affecting the river for at least 150m upstream to New River Green. It should be removed as it provides no benefit to the property in which it is located.

The second weir (pic 20) was more significant and held ~0.2m head of water. It was created to retain water for the owner's wildfowl collection and integrates with a grille across the river (to stop birds, not fish).

The impoundments, in combination with the adjacent trees, their leaf-fall and the dabbling habit of the wildfowl, were retaining a high volume of fine organic silt.

Pic 20 – The weir within the Regal Lodge grounds is used to retain water for a wildfowl collection. It is degrading the river.

Access was gained to the mill grounds. The mill pond was ~12m wide and almost entirely filled with silt. No attempt was made to test the depth.

Pic 21 – The silted-up mill pond.

A side-sluice conveyed the entire river flow away from the mill and down a narrow channel with a drop ~1.2m. The sluice is completely impassable to fish. Immediately downstream of the sluice the bed was clean of silt due to the turbulent water. Stones were turned to assess the invertebrate fauna and to search for bullhead. The invertebrates were more diverse than beneath the A14 bridge with *Gammarus* sp. shrimp present, but no bullheads were found. Bullhead have probably been lost from the river through Exning due to its drying, poor habitat and lack of connectivity to its permanently wet lower reaches preventing them (and other fish species) from recolonising.

Pic 22 – The side-sluice now conveys the entire river flow.

The mill had 2 lifting gates each controlled by a hand-screw arrangement. The apertures of each gate appeared relatively small at ~0.3m diameter and were clearly recent installations to take flow beneath the current house at the site of the former mill. It is not known what the previous arrangement was, but the current set-up is clearly resulting in a lack of flow moving beneath the mill site and a consequential siltation of the mill pond due to almost no sediment transfer. It should be noted that due to the establishment of gardens, additional properties and mature trees, there is no easy means of removing silt from the mill pond and no place to put the silt to allow it to dewater.

Pic 23 – The sluice arrangement at the mill.

The side-sluice channel was followed. It was ~3m wide with a relatively rapid flow in places. However, it was degraded as a result of past dredging, shading and another weir impounding its flow. There was also a very high volume of leaves dumped on the riverbanks which ultimately will result in nutrient enrichment of the river.

Pic 24 – The side-channel around the mill, it is also impounded and full of silt.

Pic 25 – A partially defunct structure that impounds the reach above it should be removed.

The river flowed northwards into a wood but was not followed any further. The channel was very heavily silted as a possible consequence of log jams

combined with high leaf-fall input and very low-flow; the river lacks energy to scour its channel clean. The river in the wooded reach did not look suitable for brown trout but it is always possible that a relatively good reach of river may still exist and is sustaining various fish populations. Members of the Exning New River group should try to walk the entire river to gain more information about potentially good areas of habitat.

A channel was followed which led back to the mill. The channel was different in so far that it had a series of meanders, encouraging except for it being totally dry.

Pic 26 – The dry river channel emerging from the mill. The channel has clearly conveyed water in recent times, however the dark colouration is suggestive of road run-off. Note the large volume of leaves dumped on the bank top and slopes.

The former mill pool was also dry and retained a cracked-mud bed. Unfortunately, work has recently been undertaken to stabilise the bank using gabion cages filled with rock. This approach is more common for high energy rivers or motorway embankments, not dry chalk rivers. The potential for water vole habitat has been lost.

Pic 27 – The dry mill pool, even during the current wet period it holds no water.

The reach of river focussed on in this Advisory Visit (AV) is not suitable to support a sustainable brown trout population due to:

- The low flow (and total loss of flow on occasions)
- The lack of suitable spawning gravels
- Poor in-channel habitat (often due to impoundments)
- Lack of connectivity to lower reaches.

Although not part of the AV, a number of locations were checked further downstream to see how the river changed. A selection of pictures are presented in the appendix.

5.0 Recommendations

No interventions are recommended in the area upstream of the A14 in the wet woodland. That area should be left undisturbed as a haven for its flora and fauna (especially invertebrates).

The fishpond is drawing water from the river. The river has a limited amount of water and the volume lost to the pond, and to increased evaporation, is likely to be detrimental to the river's flow. Based on the pond's ecological

value, judgement should be made as to whether the pond should still receive the flow.

The pond may contain signal crayfish as a disused crayfish trap was found. If the pond indeed contains the invasive non-native crayfish then that is a further reason to isolate it from the river. Surveys should be undertaken to establish the extent of crayfish in the New River.

Where the river had flow it may be possible to establish water crowfoot by planting it out in the riverbed (in early spring). Plants could be taken from the river lower down (with landowner permission) where it grows profusely. Information on how to plant out crowfoot can be found at https://www.wildtrout.org/wttblog/sprite-method-re-establishing-ranunculus-post-industrial-rivers

The presence of water voles is of county importance and the group should contact the Suffolk Wildlife Trust's Water for Wildlife Project Officer to discuss how the species' conservation can be improved on the river. Initial observations suggest there is much potential for enhancing water vole habitat. Surveys should be undertaken to establish where the core populations are, establish where the habitat is suboptimal and identify where habitat connectivity is required to sustain the species. Although many residents have taken measures to strengthen their river bank (and in many cases have now totally excluded the species for the foreseeable future) it is possible to enhance habitat to create connectivity as has been done on the River Mel, Cambs. Pic 28 shows before and after pictures, of work installed by community volunteers, which has improved the river for water voles.

Weirs are degrading the riverine environment and should be removed. This is likely to be contentious with some landowners, it is therefore recommended that the weir near Brookside be the first for removal. Its impact on the reach above can be easily assessed without the need to go on to private land. If more reaches of the river can be re-energised then it may be possible to establish areas in which to plant out water crowfoot.

Members of the Exning New River Group should walk the entire river to gain more information about potentially good areas of habitat and possible barriers to fish migration.

The former mill site represents a significant impoundment and silted reach of river. The side-sluice looks to be in a poor state of repair. When it requires rebuilding consideration should be given to creating a sluice gate that extends to the bed to enable the mill pond to be fully drained. This may initiate improved sediment transport but it's unlikely to cleanse the entire reach. NB

– to simply allow large volumes of fine silt to be flushed downstream in one event is unacceptable. Plans will almost certainly be required for specialist desilting of the mill pond at some point in the future.

Simple habitat enhancement measures could be applied to increase bed scour, assist sediment transport and aid the evolution of marginal habitats. They include the use of flow deflectors and brushwood ledges more information on their construction and positioning can be found at https://www.wildtrout.org/content/habitat-improvement However, many of the techniques require reasonable flow, gradient and occasional direct sunlight.

Pic 28 – The use of brushwood mattresses combined with pre-planted coir rolls enabled rapid marginal vegetation growth, which in turn provided water habitat and an important connection between existing populations.

6.0 Making it Happen

It is a legal requirement that anyone who intends to carry out works in, over, under or near an Ordinary Watercourse in Suffolk must contact the Lead Local Flood Authority (Suffolk County Council), to obtain Land Drainage Consent before starting the work. This is to ensure that work does not endanger life nor property by increasing the risk of flooding, or cause harm to the water environment. Suffolk County Council has information on its website as to the type of activities that require consent https://www.suffolk.gov.uk/roads-and-transport/flooding-and-drainage/working-on-a-watercourse/

Due to the lack of suitability of the New River for brown trout in its current low-flow regime it is recommended that conservation action for the river be focussed on its water vole population and that assistance is sought from the local Wildlife Trust and the County Council.

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 material, enhancing fish stocks and managing invasive species.

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

The WTT website library has a wide range of materials in video and PDF format on habitat management and improvement:
www.wildtrout.org/content/library

7.0 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.

8.0 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. Accordingly, 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 comments made in this report.

9.0 Appendix

Pic 29 – The river looking upstream from Landwade Road (TL 62299 67495).

Pic 30 – The river looking upstream from Landwade Road (TL 62146 68439).

Pic 31 – The river looking downstream from Landwade Road (TL 62146 68439). Note the chalk and gravel beneath the scour caused by the fallen tree.

Pic 32 – The river showing the characteristic chalk river plants of lesser water parsnip and water crowfoot (TL 60915 69508).

Pic 33 – The river looking upstream from the Ness Road (B1102) (TL60889 69553).

Pic 34 – The river looking downstream towards the EA gauging station (TL 60882 69562). Note the chalk particles smothering the bed and extensive growth of lesser water parsnip.

Pic 35 – The EA gauging station, a barrier to the upstream movement of small fish but adult trout would be able to traverse it (TL 60873 69589).

Pic 36 – The river beyond Nutt Tree Farm has taken on a fenland drain appearance (TL 58899 70014).

Pic 37 – The river near Hundred Acre Farm (TL 58551 69903).

Pic 38 – The river looking towards Wicken Fen (TL58158 69897).