Advisory Visit - 26 February 2003

A report on behalf of Wild Trout Trust

River Chess
at
Micklefield Estate, Near Sarratt, Rickmansworth, Herts.

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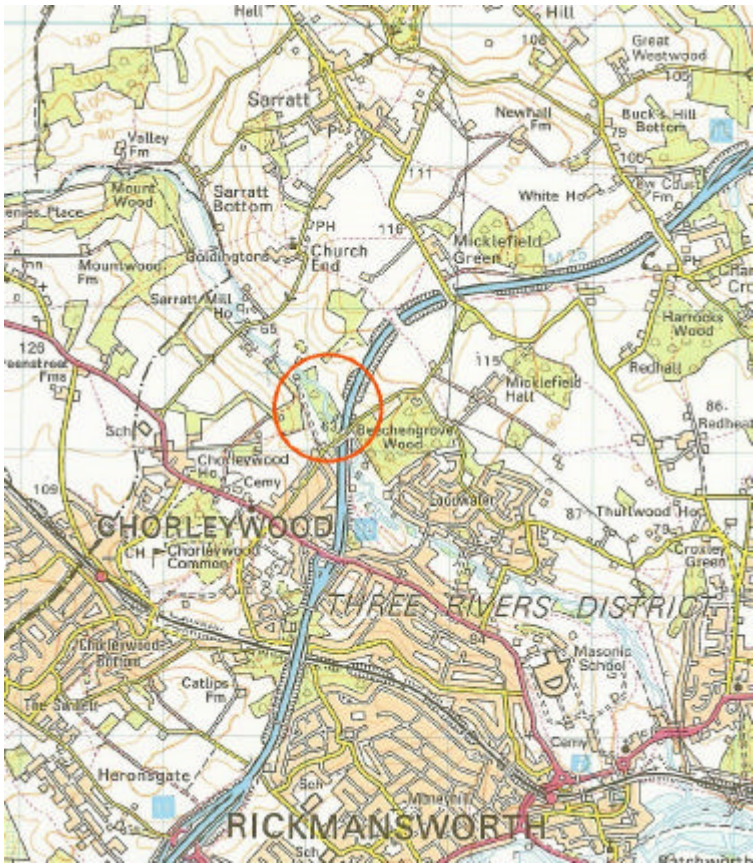
Background and Objectives
Approximately 600m of the River Chess flow through woodland on the Micklefield Estate, to the west of the M25 near Chorleywood.



The river has been fished privately in the past, with stocking of up to 300 trout per year. In recent years the river has not been fished.

The stretch is reported to have supported plenty of *Ranunculus* until an incident of sewage pollution occurred some years ago. Since then, the *Ranunculus* growth has been very poor. A number of narrowing schemes have been implemented along the stretch, apparently by the NRA 10-15 years ago.

The objective is to improve the condition and habitat for wild trout along this stretch, with a view to it being fished by a small syndicate.

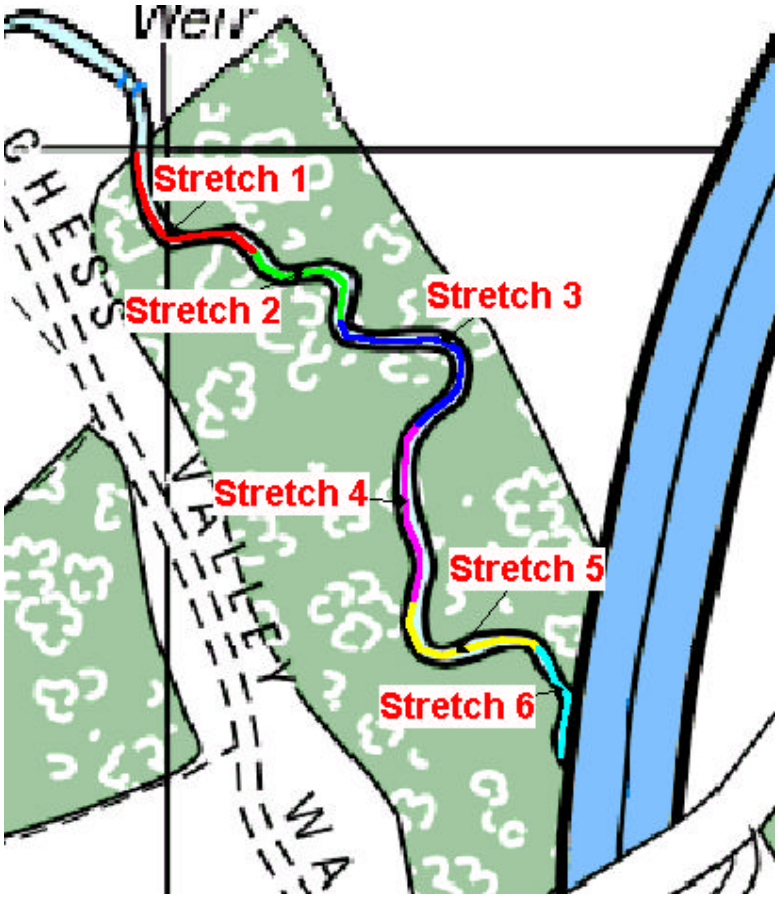
Description of the river & specific recommendations
At the time of the visit, the river level was slightly higher than mean summer level, with a strong flow. The water depth varied from 0.3-0.4m over two riffles to over 1m in some of the pools. Swims typically varied from 0.5-0.7m. The channel width ranged from 12m wide to 4m.

Silt is present in the gravels, also collecting in large margins on the inside and outside of bends. There is evidence that the river may, at some time, have been dredged.

The above are compatible with reduced water levels and flow rates over time. To improve the river, the narrowing schemes had been carried out. These involved staked hurdles used opposite one another to narrow the channel or alternating to promote some additional deviation to the channel. These wooden structures are now coming to the end of their life-span. Boulders have also been placed in the bed to scour out some pools.

These works have been very successful in creating some faster, cleaner channels, where weed seems to be colonizing. Furthermore, they have allowed the build up of silty, vegetated margins, which are invertebrate strongholds. These margins have built up on the inside and outside of the banks: the natural sequence of pools and riffles must be thought of as occurring within the narrower channel rather than the original channel.

I have divided the river into 6 stretches: a summary of the main points is given below. Any distances are quoted as metres along the east bank, measured from the northern end of Stretch 1.



Stretch 1
0m – 115m

At the top 30m of the river there is a strong flowing riffle, with hard gravels and patchy weed. If permission could be sought to coppice any one of the larger alders, then this would be beneficial.

Similar benefits would be gained from preventing re-growth from willows and alders to get too high.

From 40m there is the remains of a previous narrowing. This should be repaired and supported along the inside of the bend. At 54m there is a leaning willow across the river. This should be coppiced.

From 80m there is the remains of old hurdles on the south-west bank (inside bend). Again these should be supported to hold the silt. Thorn and scrub should be cut here.

From 101m there are boulders, which have scoured out some pools. These are effective, but below the pools two sandbanks have built up, which are dividing the flow. Revetments or deflectors should be positioned from 105m – 120m on the east bank and another opposite to incorporate the sandbanks. These will single the flow and trap silt.

The top photograph shows the riffle at the head of this stretch.

The middle photograph shows the leaning willow at the top right and the two lengths of silty margin to be supported.

The bottom photograph (taken from the top of Stretch 2) shows where the deflectors are needed: alongside the leaning willows on the far bank. The scrub and willow should be coppiced.

Stretch 2
115m – 190m

The revetment or deflectors continue from the bottom end of Stretch 1 by approximately 10m.

At approximately 138m, two hurdles remain on the south-west bank, leading up to the inside of a bend. These should be supported. The fallen tree at 152m, shown in the photograph to the right, should be retained. This will, in time, build up with silt and the strong flow will continue to scour out a pool.

Stretch 3
190 m – 310m

Below the bridge at the beginning of this Stretch, hurdles have helped to build up a sandbank on the inside of the bend. A nice pool has developed on the outside of this bend, shown in the photograph to the right.

Further downstream, seen in the lower photograph, there are some good flows, but only patchy weed. It is recommended to clear back some of the fallen scrub and cut branches back to give more light.

Between 220m and 250m, there is scope to consider creating a riffle. It would depend on summer water levels, but it is likely that importation of 50-80mm gravel might be necessary. (In some places, the existing gravel is lacking the mid-size range, and so the smaller material is often completely scoured away, to leave the larger stones only.)

The final view down Stretch 3 is through a narrows created by the NRA. This has worked very well and needs little support. However, the same comments apply. This would make a nice riffle, but perhaps some imported mid-size gravel is necessary, depending on summer water level.

Stretch 4
310m – 410m

This Stretch is very silted, despite the potentially good riffles from 360m – 412m.

The channel is wide here and so methods to narrow the channel and trap silt are necessary. Looking at the photograph to the right, approx 315m – 335m, either a series of upstream deflectors should be installed, or a low chestnut/ hazel revetment. The overhanging scrub willow should be coppiced.

The photograph on the right is looking upstream from 412m, towards the ford. A revetment should be constructed from the foreground in a sinuous line to where the bank comes in from the right. The channel should be narrowed to between 5m and 8m in width.

The gravels are very silty: these should be raked over to break up the silt in the Autumn. In addition, consideration should be given to a shallow (150mm) upstream V weir, positioned a couple of metres below the ford. This should scour out a shallow pool.

Stretch 5
410m – 521m

Another successful narrowing leads from the end of Stretch 4. This section needs no attention at the moment. From the narrowing, a wet margin has built up, shown in the photograph on the right, on the inside of the bend. This stretch has good flow and leads to a very nice pool under the horse chestnut, as shown in the lower photograph.

This was reported to have been a good place to fish in the past: it looks as though it still is!

Downstream of the horse chestnut, on the south-west bank, willows should be coppiced to give as much light as possible. The remaining hurdles on the inside bank should be supported or replaced.

Stretch 5 is in good condition and the water leaves for Stretch 6 in a clean fast flow under the bridge.

Stretch 6
521m – 580m

The last 50m or so of the river are dominated by overgrown scrub. The channel itself seems in good condition but clearance and coppicing of the scrub will give great benefits.

The remains of the grille at the bottom of the river should be removed.

General Comments

Improve habitat to retain fish With regard to improving the condition of the river for fishing, the approach should be to improve the habitat first and then consider whether stocking is necessary. The improved habitat should increase the 'holding capacity' of the river, so that wild trout and any stocked fish should stay along this stretch out of preference. No form of retaining grid should be used to segregate the river.

Improve light levels Except along Stretch 4, which runs largely north to south, the river is subject to shade. Since the surrounding woodland is chiefly a cricket bat willow crop, there is little scope for creation of glades at this stage in the rotation. However, the majority of the scrub should be coppiced, except where over deeper pools. There is more weed growth than was reported but increasing light levels will improve the situation further.

Consider sources of silt Silt is an issue on this river, indeed, silt from the large side duck-ponds and from the surrounding woodland considerably supplements that carried along the river. It must be accepted, therefore, that without changing these features, this stretch will always be subject to higher than normal levels of silt.

Repair and extend narrowing schemes The original NRA schemes were well planned and have been very successful. The structures are now deteriorating, so repairs and replacement of these should be carried out, to continue the benefits given so far. An example is shown the photograph below.

Accretions of silt on the insides of bends should be supported and extended with structures such as chestnut/interwoven hazel revetment. In suitable places, an alternative could be to use stems of trees 30-40cm in diameter, supported at the upstream end by a hurdle or faggot. These alternatives will be less satisfactory but less costly. These structures will accumulate silt further and reduce the tendency for silt to slump back into the channel. A good example of where the margin could be emphasized, and the channel narrowed, is shown in the photograph below.

Fishing access over these margins is difficult, so consideration should be given to providing access is suitable places to fish from within the river, rather than building platforms or promontories.

It is recommended that the Environment Agency is consulted regarding any proposed works on the river. The river is not within an SSSI, so English Nature would not need to be consulted.