



Advisory Visit

River Dane, Cheshire

Eaton Flyfishers

10th July, 2008



1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin and Paul Gaskell of the Wild Trout Trust on the River Dane, Cheshire on 10th July 2008. Comments in this report are based on observations on the day of the site visit and discussions with Chris Phillips and Neil Gibbs of the Eaton Flyfishers (www.eatonflyfishers.co.uk), and Dave Hulse of Rease Heath Agricultural College.

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

2.0 Fishery Overview

Eaton Flyfishers (formerly Buglawton Trout Club) have been fishing the River Dane near Congleton in Cheshire for nearly a century. The Club has about three miles of river fishing and 50 members paying £110 per annum (plus £70 joining fee).

The Club allow fishing with fly only and barbless hooks and catch-and-release are encouraged. There is a bag limit of two fish over 10" per visit

The Club stock 600 triploid brown trout each year in two batches of 300. The stock fish are generally up to 14", but there are a few 2 to 2½-lb fish introduced as well.

3.0 Habitat Assessment

The River Dane originates on Axe Edge in the Peak District and flows west, draining part of the South West Peak, an area of upland flanked by lower hills to the south and west, indented by the river valley which broadens to the west into gently undulating lowland as the river drains to the Cheshire Plain. The Dane is a tributary of the River Weaver.

The three miles of river controlled by Eaton Flyfishers lie just upstream of Congleton, at the eastern edge of the Cheshire Plain close to the South West Peak area. The character of the river in this reach is therefore very much

one of transition between upland characteristics and those of the gentler, meandering reaches of the more lowland plain.

The river here has a very active geomorphology and combined with the surrounding geology of soft shales, mudstones and sandstones has resulted in a deeply incised channel with excellent pool and riffle habitat, steep banks and in places cliff faces dropping vertically down to the river.

There is an abundance of mature trees along the river, particularly on the right bank on the lower part of the reach. This woodland is part of the Madams Wood site of special scientific interest (SSSI) (http://www.english-nature.org.uk/citation/citation_photo/1005786.pdf). This is an ash-dominated woodland with an understorey of wych elm, and alders predominating along watercourses.

The steep nature of the banks, soft geology and active nature of the river has resulted in many trees slipping into the river, giving rise to an abundance of Large Woody Debris in the river channel. The LWD provides a great diversity of instream habitats and greatly enhances the conservation and fishery value of this reach of the river.

Signal crayfish (*Pacifastacus leniusculus*) are present in the river here. The Club wish to control their numbers by trapping but have been refused a trapping consent by the Environment Agency.

A brief search under stones during the visit revealed the presence of stone-clinging mayflies (Heptageniidae), small stoneflies (Leuctridae), Glossosomatid caddis and olive nymphs (Baetidae); adult Leptocerid caddis were also observed. The Club reported very good hatches of olives, and a limited hatch of Mayfly (*Ephemera danica*).

The visit began at the downstream limit near Hillmoor Farm (National Grid Reference SJ 873 648) and ended at Colleymill Bridge (SJ 891 658) where the Buxton road crosses the river, close to the upstream limit a short distance upstream.

Hillmoor Farm section

The right bank here near the downstream limit (beat 1) was of a shallower gradient leading down to gravel side bars alongside the river. There are a



Photo 1 A good width of marginal vegetation protected by an electric fence. Note however the stand of Himalayan balsam (start of beat 2)



Photo 2 A great example of stable LWD in the river channel



Photo 3 An excellent example of stable in-channel LWD - a willow still attached to its root bole



Photo 4 A small section of bank erosion on beat 1

few willows and sycamore trees present on this bank. The first field on this bank is unfenced and is grazed by cattle and horses which have access to the water; the shallow bank gradient means that livestock access is spread out rather than concentrated, so bank damage is light and does not give cause for concern. There is a short area of bank erosion at the upstream end of this field on the right bank where an exposed soil cliff has formed.

The left bank here is steep with a line of trees (ash, alder, hawthorn and hazel). Beyond the tree line is a field with hay/mowing grass.

The next field upstream (beat 2) had an electric fence along the right bank providing a good riverside margin dominated by nettles, willows and Himalayan balsam (*Impatiens glandulifera*), giving way to dense stands of hazel (which had been coppiced previously) with upstream progress. The fencing ended halfway up this field but the steepening bank prevented livestock access to the river. The opposite bank (left bank) is steep and tree covered (being the start of Madams Wood) and gives excellent overhead cover above the river.

Himalayan balsam *Impatiens glandulifera* was introduced to the UK in 1839, and is now naturalised, especially on riverbanks and waste ground and has become a problematical weed. It is a tall, robust, annual producing clusters of purplish pink (or rarely white) helmet-shaped flowers. These are followed by seed pods that open explosively when ripe, shooting their seeds up to 7m (22ft) away. Each plant can produce up to 800 seeds.

It tolerates low light levels and, in turn, tends to shade out other vegetation, impoverishing habitats. Being an annual plant it dies back in winter leaving large areas of bare bank vulnerable to erosion. Its presence along riverbanks is therefore undesirable.

In common with the rest of the river, this section has a well developed pool and riffle sequence, with well sorted gravel, and numerous examples of LWD; overall, very good habitat for wild trout.

In the third field (beat 3) a tree has fallen across the fence on the right bank allowing some livestock access to the river bank (SJ 87837 65092). The fence is two-strand barbed wire and although there were no sheep present in the field at the time of the visit, it was clear from the wool on the barbed wire that sheep had previously pushed under the wire and grazed the river

bank. The extent of the river bank grazing was light, and did not give cause for concern.

Upstream of this point the right bank steepened with the long glide known as 'the aquarium' below. There was no fence here, but a dense screen of hazel and alder and the steep bank prevented livestock access to the river. Madams Wood continues on the left bank.

In the next field upstream (SJ 87947 65343) the right bank has an electric fence and the field is grazed by shire horses. The Club reported the field was generally fenced when the horses were present, but is grazed by sheep down to the river at other times. There is a generous margin between the electric fence and the river, and bankside vegetation cover is good.

Himalayan balsam is present, but not in the densities that might be expected on river banks with such a soft substrate. This may be due to the control being exerted by limited grazing of the banks.

Upstream of this point is an area where a large log jam was removed by the Environment Agency at the request of the club. Beyond this is a very nice sequence of riffles, but also some more extensive stands of balsam where grazing animals cannot reach.

Bank Farm and Rode Farm sections

This section was walked starting at beat 7 (SJ 88216 65709) in a field of mowing grass on the right bank. A good margin between the field and the river is present behind the fence. Both banks are quite heavily shaded by trees, with some leaning across the river. There are some steep cliff faces on the left bank.

On beat 8 there is an area of recently planted trees (oak, ash and hazel) on the right bank forming a 15-m headland behind the mature riparian tree line. Progressing upstream, the upper section of the fishery is wooded on both banks, with steep banks and cliff faces in many areas. Land use on the left bank is mowing grass. A small tributary enters the river on the left bank just downstream of the road bridge.

Throughout this section there were many examples of LWD in the river channel, providing excellent habitat and promoting a diversity of flows and channel morphology. A pool and riffle sequence was present throughout the reach.



Photo 5 Example of river cliff



Photo 6 Riffle, pool and woody debris - an ideal habitat combination.



Photo 7 Fences and livestock access to the river bank need to be carefully managed



Photo 8 Good and bad! LWD with Himalayan balsam growing on it - leave the former, remove the latter.

4.0 Conclusions

Overall this part of the River Dane has excellent habitat for wild trout. The river is geomorphologically active and has a very good pool and riffle sequence. LWD is abundant and enhances the diversity of flows, habitat and sorting of river bed sediments. Land use on the left bank is mostly woodland and falls into a SSSI; on the right bank land use is agricultural (livestock and dairy) and land management appears to be sympathetic to the river, with generally wide, fenced margins between the river and fields.

5.0 Recommendations

- Keep a watching brief on the density of livestock in fields on the right bank and their access to the river, particularly where temporary electric fencing is used. The aim should be to maintain as wide a margin as possible, with a good density of tall vegetation.

The field in beat 1 is the only significant length of river accessible by stock. Erosion is not a major problem here because stock access is spread over a wide area. The club could explore the possibility of fencing this section, ideally in combination with an alternative drinking source because concentrating livestock at a cattle drink in the river would be counter-productive and technically difficult in a spate river. Temporary electric fencing would be the best option in terms of cost, flexibility and controlling balsam (see below).

The eroding section in this field could be controlled by fencing well back from the river (10 metres or more) and planting trees to establish a root network. Protecting the toe of the eroding bank could also be achieved by fixing LWD in that area, possibly in the form of a tree kicker (Figure 1).

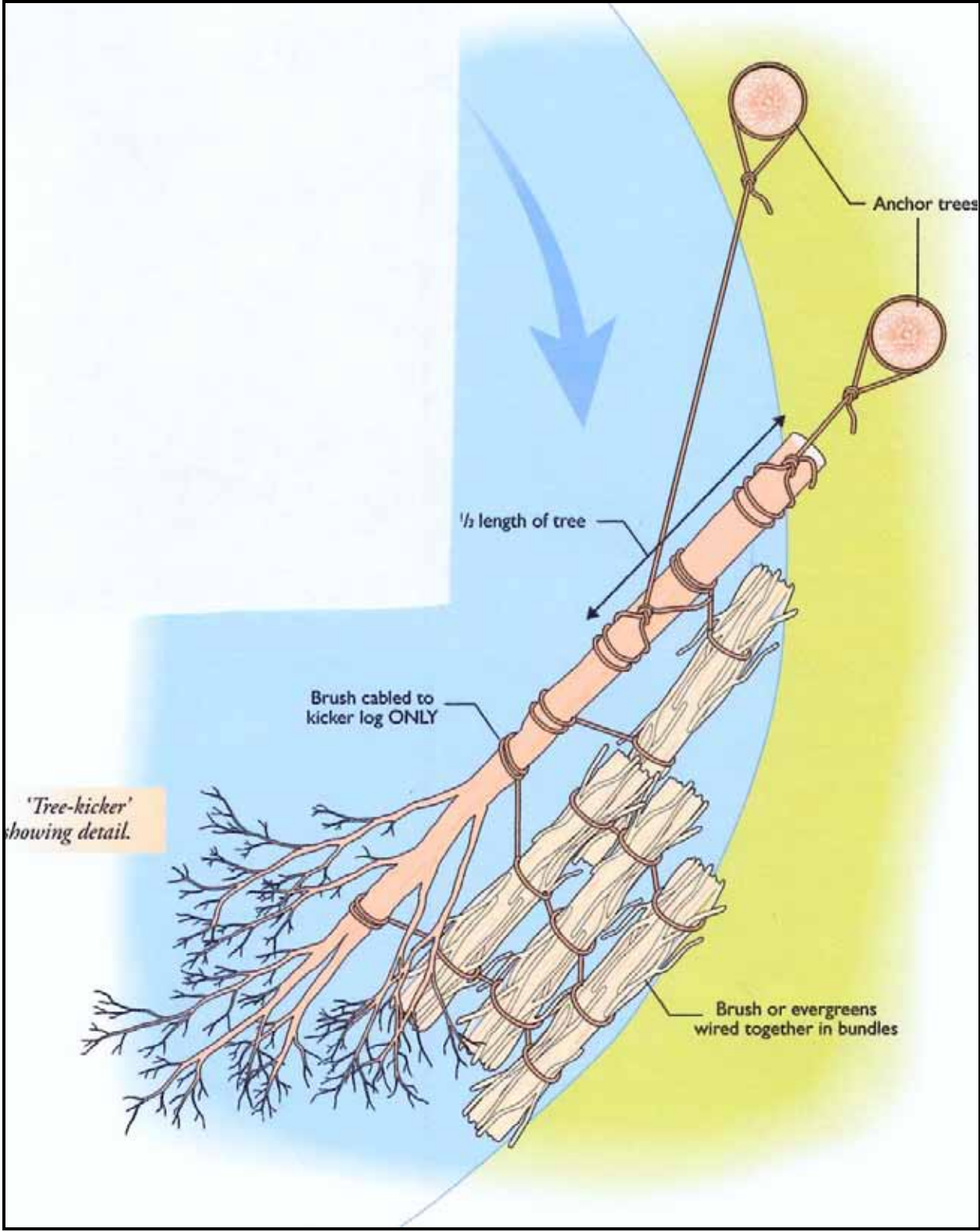


Figure 1 Example of 'tree kicker' erosion protection for high energy streams

- Control Himalayan balsam. This can be achieved by physical or chemical means:

Physical Control

The main method of control, and usually the most appropriate, is pulling or cutting plants before they flower and set seed. Working parties are the best means of doing this, and Rease Heath College may also be able to provide assistance.

Limited grazing access appears to be controlling balsam in some sections of the fishery. This should be continued, but it is recommended that stock access is carefully controlled to prevent overgrazing of desirable species, or damage to river banks. Access in late spring or early summer before the balsam has flowered would be ideal. In areas inaccessible to livestock, physical or chemical control is recommended.

Chemical Control

Before using weedkillers alongside waterways it is necessary to contact the Environment Agency and obtain their written consent via form WQM1 (www.environment-agency.gov.uk/subjects/conservation/840870/840941/) . It can advise on suitably qualified contractors, as can the National Association of Agricultural and Amenity Contractors (Tel: 01733 362920).

Himalayan balsam can be controlled with a weedkiller based on glyphosate, such as Roundup. Glyphosate is a non-selective, systemic weedkiller that is applied to the foliage. It is inactivated on contact with the soil, so there is no risk of damage to the roots of nearby plants, but care must be taken that the spray doesn't drift onto their foliage.

Glyphosate is most effective when weed growth is vigorous. This usually occurs at flowering stage but before die-back begins; with most weeds, this is not earlier than mid-summer.

It may take a couple of seasons to obtain good control due to the germination of more weed seedlings.

- The club should adopt a policy of retaining LWD in the river channel wherever possible. The West Country Rivers Trust provides a useful guide to the management of natural LWD:

1. Is the debris fixed, if yes then continue to 2, if not continue to 5.
2. Is the debris causing excess erosion by redirecting the current into a vulnerable bank? If yes then go to 5 if not then go to 3.
3. Would fish be able to migrate past it (take into account high river flows). If yes go to 4, if no go to 5.
4. **Retain the woody debris in the river.**
5. **Extract the debris.**

Note: If the debris dam needs to be removed but there is still a significant amount of the root system attached to the bank then it is recommended that the stump be retained for its wildlife habitat value and its stabilising effect on the bank.

- Where there is a single tree line along a river bank, the Club should consider tree planting behind this to provide a succession of mature trees in the future, as has been done in beat 8. This will insure against severe erosion developing if a tree falls in the river leaving an exposed bank. This is particularly important on the outside of bends. There may be grants available to landowners under agri-environment schemes (e.g www.forestry.gov.uk/ewgs).
- It is recommended that the Club abandon efforts to control Signal crayfish by trapping. There are no known means of eradicating this species and no evidence it has a detrimental impact upon trout stocks. Trapping tends to be selective towards larger individuals reducing the self-regulating pressures (cannibal predation) on the population, leading to increased numbers should the trapping effort reduce or cease. The effort that could be expended upon trapping could be used much more profitably in balsam control or tree planting.
- It is recommended that the Club continues to use triploid brown trout stock fish to avoid interbreeding between wild trout and farmed fish. In addition the Club should review its catch returns in relation to stocking levels, and consider reducing the number of fish stocked. Other river trout fisheries have found that as catch-and-release has become more widely practised, they have been able to reduce their stocking levels without reducing catches. In many cases the rod averages have

increased, and greater numbers of wild fish have contributed to catches. This is probably because of increased numbers of wild fish in response to reduced competition and predation between stocked and wild fish.

It is a legal requirement that all the works to the river require written Environment Agency (EA) consent prior to undertaking any works, either in-channel or within 8 metres of the bank. Any works affecting the SSSI on the left bank will require the consent of Natural England.

6.0 Making it Happen

Most of the recommendations made in this report can be taken forward by the Club. The Wild Trout Trust can provide further support if required in the following areas:

- Advice on technical matters such as consent applications and in preparing a project proposal.
- Providing seed corn funding (normally between £500 - £1500) via the Advisory Visit bursary scheme or Rods for Conservation scheme. These funds are for use as matched funding to assist in securing funding towards project work (see www.wildtrout.org under the Practical Help link).
- A practical visit (PV) to demonstrate some of the techniques recommended. Please note that demand for PVs is currently high, and they are intended to assist groups that will be undertaking the work themselves rather than deliver an entire project. Further details about PVs are on the WTT website www.wildtrout.org (under the Practical Help link).

The local Environment Agency Fisheries team may consider providing project funding, particularly given the concurrence of the Club's aims with those of the National Trout and Grayling Strategy of habitat improvement and protection of wild brown trout stocks (through using triploid stock fish).

7.0 Disclaimer

This report is produced for guidance only and should not be used as a substitute for full professional advice. 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.