



Advisory Visit

River Bollin, Dunham Massey, Cheshire

15th April, 2009



1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin of the Wild Trout Trust on the River Bollin on the National Trust's Dunham Massey Estate near Altrincham, Cheshire on 15th April 2009. Comments in this report are based on observations on the day of the site visit and discussions with John Mann, Estate Warden for the National Trust.

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

The River Bollin is 49 km long and rises in the edge of Macclesfield Forest, flowing west to join the River Mersey (Manchester Ship Canal) near Lymm. The River Dean is the major tributary of the Bollin, and the catchment area totals 273 km².

3.0 Habitat Assessment

The stretch of river between the A56 road bridge (National Grid Ref SJ 7449 8601) and the Bridgewater Canal aqueduct was walked; National Trust ownership extends a couple of miles downstream of the aqueduct. The river here has a low gradient and occupies an incised channel in the sandy soils of the Cheshire Plain. About halfway down the reach is Bollington Mill, now redeveloped for residential use, and a large weir which impounds the flow upstream for a considerable distance (Photo 1). A fish pass (Photo 2) is currently being constructed around the weir as part of the Mersey Life Project (<http://www.environment-agency.gov.uk/homeandleisure/wildlife/102362.aspx>).

It appears that historically the river channel upstream of the mill was re-aligned to provide a head of water to power the mill, leaving the land adjacent to the channel below water level, and hence prone to standing water following floods (Photo 3). The river has been extensively dredged throughout the reach inspected and embankments are present on one or other of the banks (mostly the RHB) (Photo 4).



Photo 1 Weir at Bollington Mill



Photo 2 Fish pass construction (LHB) at Bollington Mill weir



Photo 3 Low-lying land behind the embankment is prone to standing water



Photo 4 The river has been historically dredged and has steep banks topped with embankments

Adjacent land is used for grazing dairy cattle by the tenant farmer, and he actively maintains the embankments to reduce the incidence of flooding (Photo 5). The embankments may however contribute to the retention of floodwater on the land once they have been overtopped. It would be valuable to assess the relative merits of the embankments with respect to flood prevention and water retention on the land.

There appears to be little variation in the width and depth of the river channel throughout this reach, with it generally being a deep, slow-flowing glide. The only exceptions to this were faster, broken water at the site of a former bridge (near the upstream end of the reach, Photo 6); below the weir at Bollington Mill; and underneath the canal aqueduct. All these areas appear to be downstream of existing or former impoundments within the channel.

There are very few trees alongside the river along this reach, with the exception of the odd small willow. There is therefore a lack of cover both over and within the channel (from fallen trees / boughs), making it less favourable habitat for adult trout and coarse fish (Photo 7).

The sandy soils in this area are an ideal medium for the growth of non-native invasive plant species, and there was plenty of evidence of Himalayan balsam, Japanese knotweed and giant hogweed in various locations (Photo 8). Balsam in particular can contribute to bank erosion by shading out native species, but dying back in winter to leave bare banks. National Trust are aware of the issues surrounding these species and are taking steps to control giant hogweed, and encouraging tenants to tackle Japanese knotweed.

A small channel enters the river on the RHB upstream of the aqueduct which carries water from the historic working mill at Dunham Massey Hall (Photo 9). The channel is regularly maintained by dredging by the tenant farmer to ensure drainage of floodwater from the low lying land adjacent to Bollington Mill. During this maintenance the farmer has reported catching small trout in the digger bucket. If this is the case, then it may be possible that this very small channel is being used for spawning by trout from the main river.



Photo 5 Recent repairs to the embankment



Photo 6 Faster water at the site of a former bridge(?)



Photo 7 Some valuable low cover over and in the water from trees – a rare sight on most of this reach.



Photo 8 Japanese knotweed and Himalayan balsam sprouting on the banks



Photo 9 The small side stream draining the Hall grounds

4.0 Conclusions

The River Bollin at Dunham Massey is a lowland river with habitat suitable mainly for coarse fish and adult trout. The habitat could be improved by providing more bankside cover, and woody structure within the channel. There is limited opportunity for improvement of spawning or juvenile trout habitat because of the low gradient of the channel, and such efforts would probably be better targeted further up the catchment. However there may be opportunity to enhance spawning opportunities by introducing gravel to the main river at gradient break points, and to the small tributary channel draining the Dunham Massey Hall area.

5.0 Recommendations

- Contact the Environment Agency to discuss this report in the context of the wider Bollin catchment. Kevin Nash (Fisheries Technical Specialist) and Katherine Causer (Mersey Life Project Manager) will be able to give an overview of fisheries in the catchment, where habitat improvement efforts can be best targeted, and how National Trust-owned river sections fit into

the bigger picture. It may be that work elsewhere in the catchment (e.g. spawning habitat improvements) would be more cost effective than the recommendations in this section which are based on only a short site visit. Wild Trout Trust would be happy to advise on other sections in the Bollin catchment (e.g. National Trust property at Quarry Bank Mill). The Mersey Life Project details are at <http://www.environment-agency.gov.uk/homeandleisure/wildlife/102362.aspx>.

- Consider re-profiling some sections of the river bank (Photo 11). At present the channel is trapezoidal in cross-section with high banks, topped with embankments on one side of the other. Re-profiling the banks to a shallower gradient with a low berm alongside the river would improve the habitat value, and increase channel capacity; this may lead to a reduced incidence of flooding of adjacent fields and better drainage following flood events (because of the removal of the embankment). The re-profiling should ideally be targeted on the inside of meanders (Figure 1). This type of work would require some detailed planning (including a levels survey), and consideration of where the spoil could be disposed of (off the floodplain).

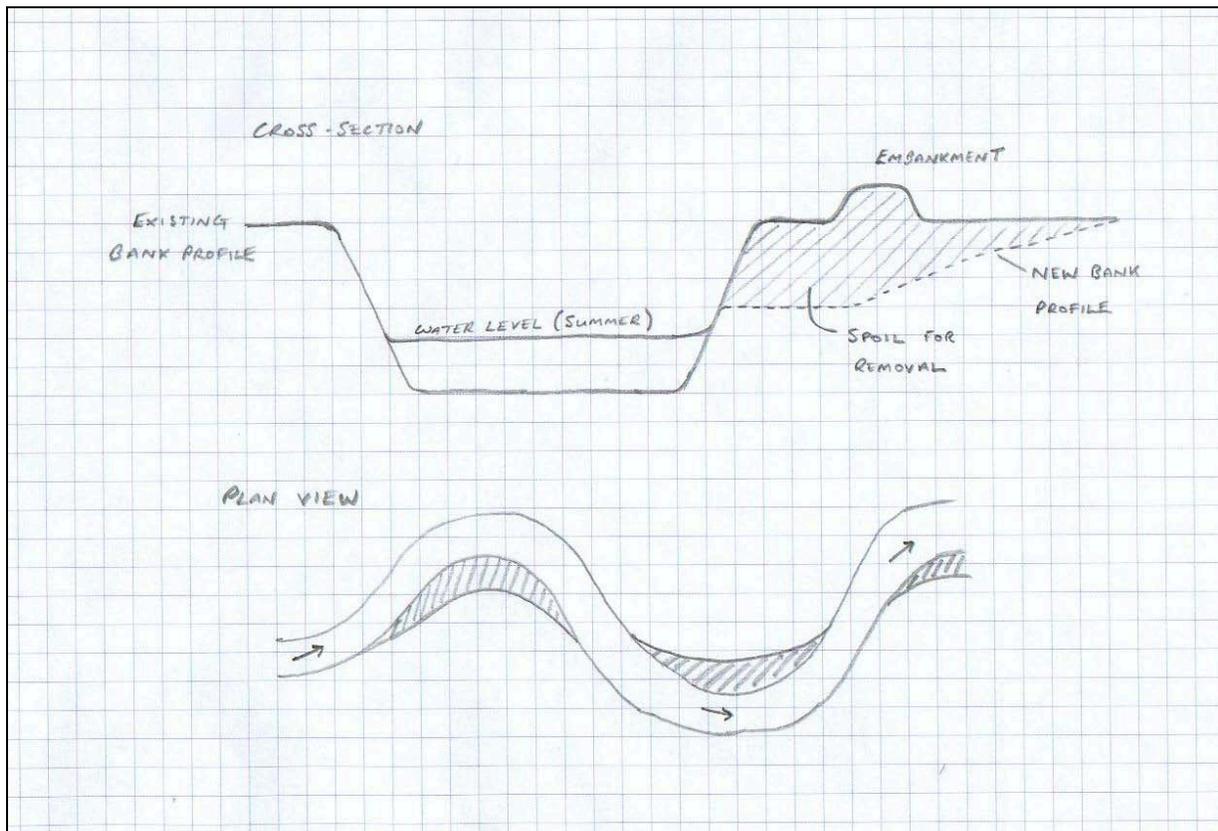


Figure 1



Photo 10 Bank re-profiling (recently completed), R. Avon, Amesbury (Photo: Jenny Wheeldon)

- Plant some native trees on the river banks. These would require protection from grazing livestock by fencing, and this would incur a management requirement to control invasive plant species.
- Take steps to control the invasive plant species. Himalayan balsam control 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.

Grazing access appears to be controlling balsam on some sections of the river. 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 (http://www.environment-agency.gov.uk/static/documents/Leisure/wqm1_form_1797463.pdf) . 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.

Advice on managing Japanese knotweed can be found at <http://www.environment-agency.gov.uk/homeandleisure/wildlife/31364.aspx>.

- Investigate whether small trout are present in the small channel draining the Dunham Massey Hall area. Improve the spawning habitat within this channel by introducing gravel spawning areas (Photo 11). This would involve raising the bed level of the channel, and would have to be agreed with the tenant farmer, and his subsequent maintenance regime modified to prevent removal of the gravel.
- Introduce gravel to the main river channel (Photo 12) at a gradient break point, such as the site of the old bridge mentioned in section 3.0 above. This could be done in conjunction with some bank re-profiling to create marginal habitat (low berms), and maintain or improve channel capacity, as described above.

NB. 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.



Photo 11 Trout redds on introduced gravel on a small Irish stream



Photo 12 Example of introduced gravel on the upper Trent

6.0 Making it Happen

The tree planting, invasive species control and gravel introduction to the side stream could be undertaken by National Trust volunteers. Further advice and support can be provided by the WTT, for example in the preparation of a project proposal, consent application and practical demonstration for the side stream gravel introduction.

For the larger works recommended (bank reprofiling and gravel introduction to the main channel), a detailed design, bill of quantities and appropriate consents would be the next steps. WTT could provide assistance with this, but current demand for help is high and to progress these works within a reasonable timescale a suitably experienced contractor would be able to put together such a package, and take forward the implementation of such works. As stated above, it is recommended that such works are discussed with the Mersey Life Project to see how they might fit in with the wider project.

7.0 Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for the sponsorship that made this visit possible.

8.0 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.