



**ADVISORY VISIT TO THE BIRDSGROVE
FISHERY, RIVER DOVE, DERBYSHIRE,
UNDERTAKEN BY VAUGHAN LEWIS,
WINDRUSH AEC LTD, ON BEHALF OF
BIRDSGROVE FLYFISHERS
JULY 2005**

1.0 Introduction

This report forms the output of a site visit undertaken on 13 July 2005 to the Birdsgrove Fishery on the River Dove near Norbury, Derbyshire on behalf of the Birdsgrove Flyfishers. Information for the report was gathered during the site visit. Additional information was provided by club members. Throughout the report, normal convention is followed, with banks identified as RB (right bank) and LB (left bank) when facing downstream.

2.0 Key Habitat Issues Identified

The fishery is well managed by the club, with access to the river afforded by sensitive strimming of a narrow path during the fishing season. During the site visit, a number of key habitat issues were identified. These are detailed below, with recommendations for appropriate management also provided where appropriate.

- There were stands of Himalayan Balsam *Impatiens glandulifera* present throughout the fishery. This plant is classified as an alien invasive weed species, with its presence undesirable. There is no policy for its control on a catchment basis, with no authority having a remit to undertake this work. At present, the club is removing the plant manually; it can be cut at ground level before the flowering stage (June) or pulled up by the roots and disposed of by composting or burning unless seeds are present.

An alternative strategy is the use of chemical control with the herbicide glyphosate when the plant is actively growing in early spring. Note that the use of glyphosate or any other herbicide on or near water requires the consent in writing of the Environment Agency.

- Many of the alder *Alnus glutinosa* trees were infected with *Phytophthora*, a fungal disease often lethal to alders. Many of the alder trees at the site will die as a result of *Phytophthora* infection. As a consequence, there will be a significant loss of bankside cover and shading. In order to plan for this likelihood, it is recommended that the club consider replanting with a mix of species, including ash *Fraxinus excelsior*, goat willow *Salix caprea* and hawthorn *Crateagus monogyna*. Trees should be planted in small groups in staggered rows at 2m centres. These will require protection from grazing animals and should be weeded around for at least 2 growing seasons in order to optimise their successful establishment and subsequent growth.

Existing alder trees could be managed by rotational coppicing to reduce shading of the channel in heavily shaded locations. In some circumstances, this can promote vigorous new growth from the coppice stool, despite the presence of *Phytophthora* infection. Trees that are already dead should be managed for invertebrates and tree boring birds such as woodpeckers, or allowed to fall into the river as a source of Large Woody Debris (see below).

- There were adequate lengths of gravel-dominated riffles for brown trout *Salmo trutta* spawning and juvenile habitat. Larger gravel and pebbles present were of a suitable size for spawning Atlantic salmon *Salmo salar* which are becoming more common on the River Dove.

Spawning gravel at Birdsgrove could be improved by strategic positioning of Large Woody Debris (LWD), in the form of tree trunks and limbs. These will from time to time naturally fall into the river. Unless flood defence requirements dictate, they should not be removed. Rather, they should be stabilised and trimmed to allow angling access whilst retaining the bulk of the woody debris in the river. Several good examples of naturally fallen timber were noted during the visit. These were having a significantly beneficial impact on the river by sorting the substrate, providing variation in bed profile, providing cover for a range of invertebrates and fish, and detaining leaf litter for subsequent consumption by shredding macroinvertebrates.



Large fallen sycamore *Acer pseudoplatanus* providing LWD to the river with beneficial impacts. Note the potential for erosion on the LB. A dipper *Cinclus cinclus* was feeding in the branches of the fallen tree, highlighting its value for a range of species

In the example of LWD shown above, there is a risk of some LB erosion. This could be addressed either by providing a degree of bank protection using rip-rap, faggot bundles or similar, or by regrading the LB to a lower, more stable batter in order to reduce the erosion risk.

LWD can actively be encouraged into the river in strategic locations (generally on riffles or shallow glide areas) by selective felling of trees. Leaving a 'hinge' at the base of the trees during felling will allow control of the placement of the timber, and will also act to stabilise the tree by keeping the tree butt attached to the bank. Ideally, the top of the fallen tree would be angled in an upstream direction in order to reduce the risk of bankside erosion.

Another option for the use of LWD to sort gravel is by the installation of upstream facing 'V' shaped groynes at strategic locations on gravel shallows. These groynes will actively scour out small pools, with the resulting cleaned gravel piles providing potentially excellent spawning sites for brown trout. Examples of flow deflectors are provided in the copy of the WTT 'Guide to Improving Trout Streams' given to the club.

It is important that the Environment Agency is made aware of any adopted policy to retain LWD in the channel, in order to prevent both its removal during routine management operations undertaken by the Agency and any unacceptable flood defence risk.

- The river was heavily incised over much of its length. In some locations, the bank had collapsed, forming a low shelf that had been subsequently colonised by vegetation. The formation of these low-level shelves by this process, or by natural accretion of sediment should be encouraged by preventing access to agricultural stock.
- Much of the bed of the river was coated in a layer of diatomaceous and filamentous algae. This was likely to be the result of the combined impact of enrichment in the catchment and low flows in the river. The club should continue to support and lobby the Environment Agency, DEFRA and other agencies in an effort to control diffuse and point source enrichment within the Dove catchment.
- Calwich weir forms a partial but significant barrier to migrating trout over a range of flows. There is no realistic prospect of addressing this in the short term, but its impact on the fishery should be recognised, with stocks upstream and downstream at least partially spatially isolated.



Calwich weir during low flow on the day of the advisory visit

- The backwater effect of Calwich weir was exhibited over the upstream reach for a distance of some 400m. The river was over-wide and over-deep within this section, with a generally depositing form. The resulting habitat was suitable for adult fish, but offered little opportunity for juvenile brown trout. As a consequence, the reach held good numbers of stocked trout and was popular with members for angling. More damagingly, the reach was a source of diatomaceous algae that affected water clarity in downstream reaches.

Remediation to the habitat in this reach would require significant resources that would be beyond the club on its own. Options that could be considered for a large-scale partnership project with the Environment Agency and other bodies include:

- The introduction of LWD to increase cover. This would increase the adult holding capacity but would not improve juvenile trout habitat or reduce the diatom blooms present
- Narrowing the channel, either by the construction of a causeway, leaving an isolated linear pond behind it, or by infilling of the channel. Spoil for both operations could be obtained by cutting the existing banks and using the resulting spoil to narrow the river
- Raising the bed of the river using gravel, either imported to site, or if present in adequate quantities, by excavation and screening of the banks/flood plain fields. This latter option could result in significant ecological benefit to the marginal and flood plain habitat

- Cut a new channel through the LB floodplain. This would potentially create a section of higher gradient, meandering channel, leaving a 'sweetening flow' along the existing channel in order to supply the old mill leat and associated ornamental pond
- Further upstream, there were short sections of overgrazed bank. Cattle and sheep in the field were damaging the bank of the river and were also preventing regrowth of previously coppiced trees. These fields should be fenced to prevent stock access to the river. However, it is understood that they were not under the control of the angling club.
- Although there was only one arable field noted adjacent to the river during the AV, the club should be aware of the potential for damaging run-off of soil and associated nutrients and pesticides that can result from arable cultivation, in particular maize. Agricultural neighbours should be made aware of the club's concerns, and, where possible, adequate uncultivated buffer strips should be maintained. Ideally, these should be at least 10m in width to provide an adequate degree of protection from run-off.



Cattle accessing river from overgrazed field on LB

- Redhouse weir was installed by the club. It had a head loss of some 0.75m –1.0m. As a result of the weir's construction, a significant erosion problem had occurred on the RB. This had been addressed by the installation of a section of willow spiling. Growth of the spiling was good, with protection afforded to the vulnerable bank area.

The weir impounded water for some 200m upstream, resulting in some loss of flow dependent habitat. The weir appeared to be gradually collapsing in places. Given the erosion risk posed by the weir, and its impact on habitat, it is likely that a policy of benign neglect may represent the best long-term management option, ideally allowing the central section of the weir to collapse, leaving the wings to protect the banks.

- Mayfield Sewage Treatment works discharged on the RB of the river below Sides Weir. Foaming was evident on the surface of the water at and downstream of the point of discharge. Of primary importance is a thorough investigation of the present status of the discharge from the works. The results of statutory samples taken by the Environment Agency are placed, along with the consent standard, on a publicly accessible register at the EA offices. On payment of an administrative fee, members of the public can inspect the register and obtain copies of data. It is recommended that the club approach the Environmental Management team at the EA's Lichfield office, Midland Region and ask for a copy of the data from the public register. The EA should also be asked whether the works has met its discharge standard over the past 5 years.
- Evidence of past dredging of the river was provided by a flood bank on the LB of the river. Ideally this should be excavated, screened on site and the resulting gravel introduced to the river. However, flood defence constraints may restrict this operation.



Bank of excavated river material on LB of the river

Adjacent to the confluence of the Bentley Brook, the river was over-wide, with a uniform shallow cross-section. Beneficial increases in bed heterogeneity and an increased carrying capacity of brown trout could be achieved by the introduction of a matrix of small (3-4m x 1-2m) faggot islands in this reach.

The islands should be arranged in a staggered line down the channel, in order to create a mosaic of channels with increased velocity, optimising conditions for the growth of *Ranunculus* spp. The islands can be constructed from faggot bundles, secured to cleft chestnut stakes, driven at 600mm centres. The central core of the islands should be infilled with woody brushings, tied down in order to prevent washout by high discharge events. The upstream 'toe' of the islands can be further protected by stone rip-rap to reduce the risk of their erosion.

The top level of all islands should be set at approximately 100mm-150mm above mean summer water level (as defined on site). During high flow periods, the islands will become submerged, reducing the risk of accumulation of debris and minimising impact on flow conveyance.



Over-wide shallow glide below the confluence of the Bentley Brook

- Five mink *Mustela vison* were seen on the river during the AV. Water voles are one of Britain's most endangered mammals. Recent research has shown that predation and disturbance by mink *Mustela vison* has the potential to adversely impact on their survival, and the abundance of wildfowl. As a consequence, it is recommended that a programme of mink tracking and trapping should be instigated. Use should be made of the recently designed mink rafts that allow simple tracking of

mink movements along the river, and their subsequent trapping and humane destruction. Details can be obtained from the Game Conservancy Trust's website www.gct.org.uk

- Note that all works to bed or banks of the river or within 8m of its banks require the written consent from the Environment Agency under the Land Drainage legislation. The introduction of any fish or eggs into any inland water requires the consent of the EA under the Salmon and Freshwater Fisheries Act, 1975. It is imperative that all relevant consents are obtained by the club.
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