

‘Brithyll Gwyllt Cymru’
‘Wild Trout Wales’

Advisory Visit - 14th June 2007

River Afon Aled – North Wales

On Behalf of Rhyl & St Asaph AA

In Partnership with Environment Agency Wales



1.0 Wild Trout Wales

WTT in partnership with Environment Agency Wales has launched a new partnership initiative 'Wild Trout Wales'. The aim of the initiative is to provide professional advice and project support for fishing clubs, riparian owners and community groups throughout Wales wishing to undertake wild trout conservation projects. During 2007 the project will:

- Undertake 10 Advisory Visits with a good geographical spread
- Provide specific project design advice and support
- Release 'Seed-corn' funding to kick-start on the ground projects.

2.0 Introduction (Advisory Visit)

This report is the output of a site visit undertaken by Simon Johnson of the Wild Trout Trust on the River Clwyd, North Wales.

Comments in this report are based on observations on the day of the site visit and discussions with Mr Martin Guiver (Rivers Officer) and Mr ???? of the Association.

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.

3.0 Fishery Background

The Afon Aled is a tributary of the Elwy. The fishery contains resident brown trout and supports an annual migration of both salmon and sea trout. The AV focused on the Llansannan Beat which comprises approximately 2km of double bank fishing. The fishery is not stocked with domesticated brown trout and only scant information exists regarding the status of the wild population. Members of the club have seen trout fry and parr, but to date fishing pressure has been so light that little is known about the status of adult fish.

The Association would like to sustainably develop this beat to offer wild trout fishing to members and by day ticket. There is a lack of this type of fishing in the catchment.

4.0 Habitat Overview

The top of the beat commences just below the village of Llansannan with the river running through a mixture of grazing and woodland. Grazing pressure has resulted in the absence of marginal vegetation which provides cover and food in the form of terrestrial invertebrates. Immediately below a water gate there is a holding pool in which salmon and sea trout are known to lie-up. This pool provides easy access for poachers to illegally net fish during migrations.

The wooded section immediately above the bridge, although shaded, provides a diversity of habitats

Below Rhydyrarian Bridge the river runs through grazing pasture on the LHB with marginal tree cover on the RHB. Again grazing along this section has removed riparian herbaceous vegetation. Gravels appear to be in good order with a range of sizes suitable for salmonid spawning and no ingress of fine silts.



Salmon and sea trout pool

Throughout this section there is a series of weirs that date back to Victorian times. It is thought these structures were placed in the river for fishery management purposes. In their current form they do not present a significant obstruction to migratory fish. However they could possibly affect movements of resident brown trout in the river that wish to spawn in headwaters.



One of series of weirs throughout the beat.

Aside from pools immediately downstream of weirs there is a lack of variety of depth in the bed of the river. This is in part to the absence of Large Woody Debris (LWD).

Large Woody Debris (LWD) is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams is derived from trees located within the riparian corridor. Streams with adequate LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential component of a healthy stream's ecology and is beneficial by maintaining the diversity of biological communities and physical habitat. Traditionally many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it, often with uncertain consequences. This is often unnecessary and perhaps harmful to high quality streams such as the Afon Aled. Stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and riffles are likely to develop. A stream with a heterogeneous substrate and pools and riffles is ideal for benthic (bottom dwelling) organisms as well as for fish species like wild trout.

There was one example of LWD that has been left in the channel, which has created much needed pool habitat (see picture below).



LWD and associated pool

The need for the careful maintenance of LWD manifested itself further downstream where a tree had fallen into the channel which had caused a blockage. The blockage had caused river levels to back-up which caused a back-eddy leading to localised bank erosion.



Root ball of fallen tree in foreground and location of original 'blow-out' in background.



Extensive erosion on the RHB – caused by back-eddy due to blockage

In places the tree cover is creating excessive shade due to a high canopy forming. There is a lack of low level bush shade which is very useful for providing overhead cover for trout.

Throughout the rest of the reach the habitat is broadly similar with the presence of weirs, riffles and some associated pools.

5.0 – Recommendations

The following are recommendations to improve both the status of the wild trout population and biodiversity in general.

It is a legal requirement that all the works to the river require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. It may also be a requirement under the Wildlife and Countryside Act 1981 that all proposals are scrutinised by Countryside Council of Wales's conservation officers.

Local EA Fisheries and Development Control staff should be contacted at the earliest opportunity to discuss any recommendations arising from this report that the club may wish to pursue.

The Association should adopt a policy of leaving LWD in river unless it is causing significant problems. As a guide the following check list has been developed by the West Country Rivers Trust:

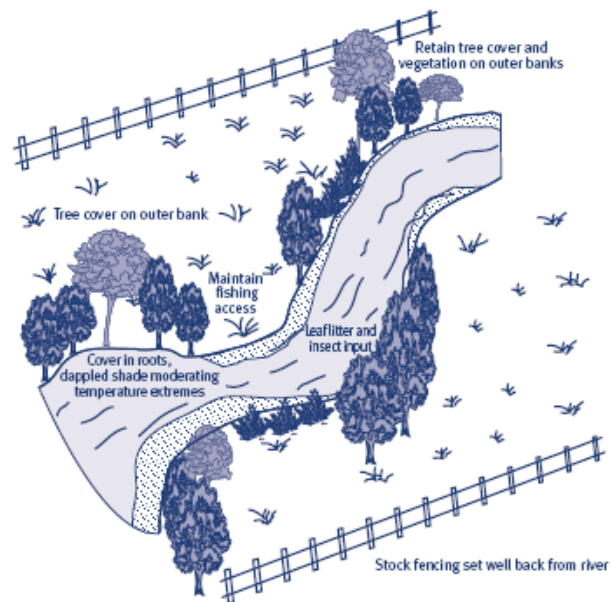
1. Is the debris fixed, if yes then continue to 2, if not continue to 5.
2. Is the debris causing excess erosion by redirecting the current into a vulnerable bank? If yes then go to 5 if not then go to 3.
3. Would fish be able to migrate past it (take into account high river flows). If yes got to 4, 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.

In the short to medium term it is recommended that LWD is introduced at several locations to improve habitat complexity. There is a predominance of high canopy tree growth, which may lead to problems of over-shading of the channel. It is recommended that the Association undertakes a programme of selective coppicing to allow more light into the channel and promote low bankside cover in the form of overhanging bush growth. A little and often programme needs to be adopted with regard to tree management on the fishery to achieve a good balance of LWD, light and shade. Willows can be 'trained' to hang over the channel by nicking the trunks and pushing them over.

Arisings from this tree work could be used to install LWD in the form of upstream facing submerged log deflectors (single or paired) to create localised scour pools in the margins and mid-channel. LWD will need to be securely 'keyed' into the bank and possibly the river bed using posts and wire to avoid problems of washout. Another option would be to 'hinge' trees, leaving them still connected to stumps, again for added security these can be secured to the bed of the river using posts and wire. Downstream of the flow gauging weir it is recommended that arisings from recent tree work undertaken by the club are bundled into 'faggots' and pinned into the margins, thus creating much needed overhangs for trout to use for refuge.

Unhindered access by stock to the river is leads to the loss of valuable vegetated margins. It is suggested that a fenced buffer strip of at least 5 metres be created along the LHB. Formalised 'post and rail' drinking bays can be created to facilitate safe, clean access for stock. The fence line should be placed well back from the bank in a straight line to avoid trash getting caught on wires (causing 'blow-out') during peak flows.



Example of a hypothetical fencing scheme

Buffer strips adjacent to a watercourse can be treated as non-rotational set aside. The same rules apply as strips adjacent to hedges and woodland edges, further information can be obtained from: -

<http://www.defra.gov.uk/farm/capreform/pubs/pdf/Setaside2006.pdf>

Grass buffer strips can be included as part of an Entry Level Scheme in the Defra environmental stewardship package.

Rules and points for grass margins are detailed in the ELS handbook -

<http://www.defra.gov.uk/erdp/pdfs/es/els-handbook.pdf>

For capital works such as fencing, this would have to be part of a Higher Level Scheme (HLS) in environmental stewardship or, if there is already a Countryside Stewardship Scheme or an Environmentally Sensitive Area agreement in place this may be able to be added to any existing

agreement. Entry to HLS is only available once an ELS scheme has been agreed. Further info on HLS can be found at www.defra.gov.uk/erdp/pdfs/es/hls-handbook.pdf

It is also recommended that the weirs throughout the beat are modified or even removed to increase flow velocity and remove the build-up of fine sediment above each structure.

Lastly, it is vital that angling clubs understand what is happening to populations of riverflies in their streams and rivers. To this end WTT recommends that fisheries register their interest in taking part in the Riverfly Partnership monitoring and training initiative. The initiative aims to support fishing clubs to monitor and help conserve the environment. More details can be found on www.riverflies.org



The Afon Aled has considerable potential to be developed and managed as a sustainable wild trout fishery. However little is known about its fish populations, water quality and invertebrates. By undertaking the recommendations outlined in this report it is hoped that Association will be able to sustain a wild fishery. To protect wild fish it is recommended that catch and release (C&R) and the use of barbless hooks are introduced as club rules in the upper 'wild' reaches. Catch return log books could be introduced to gauge the status of wild resident trout component of the annual catch in the river that the club controls. Environment Agency Wales Fisheries Officer should be approached to undertake a baseline survey of the fish population before any project is commenced and at regular intervals after initial phase of habitat works are completed.

6.0 – Making it all happen!

This report makes a series of recommendations that will improve biodiversity and the status of the wild trout populations in the Afon Aled.

Physical enhancement works could be kick-started with the assistance of a WTT 'Practical Visit' (PV).

PV's typically comprise a 1-3 day visit where an approved WTT 'Wet-Work' experts will complete a demonstration plot on the site to be restored. This will enable project leaders and teams to obtain on the ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

The WTT can fund the cost of labour (two-man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor. The use of specialist plant will be by separate negotiation.

Wet-work experts will demonstrate one or more of the following techniques that are appropriate to the site.

- Tree management (coppice, pollard, sky-lighting)
- Tree Planting
- Fencing (Installation & Repair)
- Stream Narrowing (Faggots, Coir Rolls, Spilling)
- Flow Deflectors
- Introduction of spawning substrate
- Gravel Jetting
- Introduction / Management of Woody Debris

Recipient clubs will be expected to cover travel and accommodation expenses of the Wet-work Team. The use of specialist plant will be by separate negotiation.

Further assistance with project funding can be provided through the WTT's 'Rods for Conservation Scheme'. The WTT will donate a Sage or Hardy rod for the club to raffle to raise funds for habitat conservation work. Clubs typically raise £750-1500 from these initiatives. Sage is particularly keen to work with clubs in upper reaches of rivers that are important for spawning fish.

Note: Recipients should have received a WTT AV and have obtained the appropriate consents from the relevant authorities, prior to arrangements being made to undertake the PV. WTT can advise on this.

Applications for all the above and the Rods for Conservation initiative should be made via projects@wildtrout.org

Lastly, the Association should discuss this report with local EAW Fisheries Officers. EAW and WTT will be able to provide further technical advice and possibly assistance through the Wild Trout Wales Project. The association is reminded that all works within rivers and within 8m of the bank will require written permission from EAW.

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.

