



**‘Brithyll Gwyllt Cymru’
‘Wild Trout Wales’**

Advisory Visit - 13th June 2007

Rivers Wygyr & Meddanen – Anglesey, North Wales

On Behalf of Wygyr & Medanen Association (W&MA)

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 Rivers Wygyr and Medanen near Cemaes, Anglesey, North Wales.

Comments in this report are based on observations on the day of the site visit and discussions with Mr Robin Grove-White (Chairman W&MA) and Mr Ken Parry of Environment Agency Wales (Sustainable Fisheries Project).

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 main river Wygyr is approximately 3.5 miles long draining in to Cemaes Bay. Approximately 1.5 km upstream of Cemaes the river is joined by the Medanen tributary.

There has been a fishing on these waters for river fifty years. In recent years the membership of the club has dwindled. However in April 2007 the club was re-constituted under the chairmanship of Mr Robin Grove-White. The Association has 20 members paying £25 per annum.

The objectives of the Association are:

- To enhance and encourage the welfare and biodiversity of the Rivers Wygyr and Medanen.
- To promote and protect the angling interests of its members; and
- To encourage community interest and engagement in the rivers, in forms compatible with angling.

Further to this the Association is keen to take a long-term and sustainable approach to managing its fishery resource.

The main interest of the fishery is a 'late run' of sea trout which enter the river from early autumn onwards. There are resident brown trout but these are thought eventually to become smolts and migrate to sea.

Over the last fifty years there has been an annual stocking of between 200-300 diploid brown trout. This practice ceased around five years ago. However this season 100 8-12 inch fish were stocked. A 'typical' wild trout in the reach is in the 6-10 inch size range.

There are significant water resource issues within the catchment. As a result of a tank farm development, an upper tributary in the Rhosgoch area was diverted into a neighbouring catchment. It is thought that this has resulted in a 1/3 of reduction of flows in the main river Wygyr. It is understood that EAW is looking into the feasibility of restoring this resource back to its rightful catchment.

The catchment has no statutory conservation designation; however Biodiversity Action Plan species such as otter and water vole are known to be present.

4.0 Habitat Overview

The site visit took place downstream of where the Meddanen joins the Wygyr. There are two large concrete sluice structures on both the main river and tributary which could impede the free passage of migratory fish. Due to lack of recent rain water levels were very low, however rain that morning had coloured the water making observation of the bed of the river difficult.

Recent fencing on the LHB has allowed a good mixture of riparian and marginal vegetation to develop. The reduction in grazing pressure has allowed species such sedge, tussock, alder and willow to develop providing bank stability cover and shade. Two new cattle drinks allow managed access of stock to safe and accessible drinking water.



Top of the reach – down stream of confluence with Meddenan

Flows were sluggish due to recent climatic conditions. However this situation is exacerbated by the presence of a series of low level weirs (permanent and temporary). In many locations these structures have caused flows to 'back-up with a resultant build up of coarse and fine sediments. In many places, due to low flows these depositional features were exposed above the surface of the water.



Build of sediment above a 'temporary' weir structure.

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 due 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 harmful to high quality streams such as the Wygyr. 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.



A good example of 'natural' LWD

The river then enters a wooded section where there is a redundant waterworks on the LHB. The trees on this section appear to have once been in rotational coppice, but are now providing canopy shade conditions. There is a lack of low level bush shade which is very useful for providing overhead cover for trout.

Downstream of the waterworks the river appears to take on a more active geomorphology with the presence of several active features including shoals, point bars and mid-channel islands. This has resulted in a greater diversity of bed-profile with a good balance of pools and riffles. Again there is an almost complete absence of LWD in the channel.



Riffles and pools

Towards the end of the reach one of the concrete weirs has been damaged. The resultant gap is concentrating flow and is forming a deeper pool on the RHB which provides a useful refuge in low water conditions.



From this point on the habitat remains broadly similar for the next mile or more until the river reaches Cemaes. This is where the AV site inspection finished.

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 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 unique characteristic of the Wygyr's late run of sea trout is something that the Association should endeavour to conserve and protect. Sea trout are an important component of the natural heritage of Anglesey. This is the rivers 'USP' (unique selling point) and the Association should endeavour to protect this precious migratory resource as a matter of principle.

Currently the Association stocks 100 domesticated brown trout into the river for catch and kill fishing. It is recommended that the Association adopts the precautionary principle and stops this practice due to possible long-term effects on the genetics of the sea trout population. In a recent review of the impacts of stocking Professor Andrew Ferguson states; *"Stocked farm-reared brown trout result in greater introgression in the freshwater component in a river compared to the anadromous (sea trout) component, as a result of farm-reared brown trout that became anadromous experiencing high mortality at sea. Given that anadromy is a threshold quantitative trait (i.e. heritable), stocking with farm-reared brown trout is likely to increase the freshwater component in a river and reduce the sea trout run"* (Genetic impacts of stocking on indigenous brown trout populations – Environment Agency, Science Report SC040071/SR)

To allow members of the Association access to continued sport it is recommended that Llyn Hafodol Lake is developed (as it was historically) as a put-and-take stocked fishery. The lake is enclosed and as such stocked trout would not be able to escape into the catchment. A greater proportion of the stocked fish would be caught providing an enhanced sport fishery that would have minimal impacts on the areas ecology.

The Association should continue to work in partnership with Environment Agency Wales to resolve the water resource issue. A return of a more natural flow regime would increase the 'flushing' capability of the river to

scour and self clean fine sediment which can choke spawning gravels and reduce habitat diversity.

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 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.

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.

Any surplus LWD could potentially be used to create an otter holt. Signs of otters have recently been confirmed in the catchment.

The presence of several weirs along the Wygyr does not present a significant barrier to migratory fish. However they could affect the natural movements of resident brown trout within the catchment. It is recommended that a programme of removal or modification be undertaken. There appears to be no current purpose of these structures and they are having a deleterious impact on the natural geomorphology of the river by acting as sediment traps. By breaking out a channel in the middle of each structure flows would be concentrated to create deeper scour pools downstream.

Very little is known regarding the current status of the resident and migratory trout fishery in the Wygyr catchment. It would be useful if EAW could conduct a long-term baseline electric fishing survey prior to and after any works being undertaken. This would allow the club to assess trends in the fish populations and plan future conservation projects in an informed and robust manner.

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 Wygyr.

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 the 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.