

**THE TYNE FISHERIES IMPROVEMENT ASSOCIATION**

**THE RED BURN – ACOMB, HEXHAM**

**NORTHUMBERLAND**

**ADVISORY VISIT REPORT**

Undertaken on behalf of the Wild Trout Trust by  
Ron Holloway MIFM

**7<sup>th</sup> April, 2002**



**The Red Burn.**

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## **THE RED BURN**

This visit was undertaken by Ron Holloway ( R H Associates) in the company of Richard Rowlands (Secretary of Tyne Fisheries Improvement Association and Member of West End Anglers) Bernard Kivlehan (Secretary of the Acomb Angling Club and Committee Member of Tyne Fisheries Improvement Association) Kevin Kivlehan (Acomb Angling Club) and John Saunders (Secretary, Northumbrian Branch of the Salmon & Trout Association).

### **Objective of the Visit:**

To look at the Red Burn and pinpoint and identify the limiting factors that control the free passage and healthy survival of salmonids, mainly wild brown trout and sea trout, within the burn and to suggest such measures that should, or could, be taken that will encourage spawning trout and sea trout to return and, once more, utilise the burn which historically was regularly used by healthy populations of migratory and resident wild brown trout.

### **Background:**

The Red Burn is spring fed and rises in the hills four miles above the village of Acomb. The burn comprises of two streams which flow off the hills and join together in the village of Acomb. The burn then flows for approximately one and a half miles across the Tyne flood plain where it joins the main River Tyne at Tyne Green by Hexham, just below the confluence of the North and South Tyne in Northumberland. Historically, and within living memory, the burn has been used by sea trout for spawning and above the village of Acomb there is excellent juvenile habitat and adequate spawning facilities and the water quality here appears to be good as instream invertebrates are abundant. Since the closure of a coal mine in the village of Acomb in the 1950's, groundwater has subsequently filled the old mine workings and this accumulation is now being pumped out and discharged into the Red Burn



The quality of this discharge gives rise to some considerable concern as the quality of the aquatic habitat in the burn from the discharge point, down to the main Tyne, now appears to be seriously degraded by substantial mineral deposits and suspected minerals and chemicals either carried in suspension or solution. The site, as seen on the 7<sup>th</sup> April 2002 is, in my opinion, of such quality that few, if any, salmonids would be able to live residentially in this reach. In spate flows in autumn, however, sea trout have been observed trying to access the burn but if any of these have been successful in spawning their offspring when trying to return to the main river, particularly in base mean flows, would most likely not be able to successfully negotiate the toxic effluent through which they have to swim in order to gain access to the main river.

The Coal Authority have recently completed an expensive mitigation project on the coalmine site by constructing two sediment settling lagoons and two further filtration lagoons. The latter two lagoons are due to be planted with reeds which are intended, when established in about 12 months, to further lock up toxic sediments and filter out mineral solutions and further cleanse the effluent prior to discharge into the Red Burn.



As one of the objectives of this visit was to look at the overall annual cycle of the burn and to suggest any measures that could be taken to enhance the salmonid habitat, it should be mentioned that substantiated assurances be obtained from the relative agencies to ensure that the quality of the effluent discharge is such that all species of fish are able to utilise the burn habitat downstream of the discharge point. Until these assurances have been obtained any recommendations on aquatic habitat enhancement work which may need to be done, should not be implemented.

**Suggested Actions, in order of Priority.**

1. Instigate and chair a meeting with the Environment Agency (Fisheries), Environment Agency (Water Quality), the Coal Authority and its Consulting Engineers & Contractors, to ascertain the predicted future water quality parameters for the main discharge. Obtain historic water quality monitoring records which should identify and quantify all the contaminants in the discharge. Obtain results of any recent or historic biological survey data taken on the Burn both above and below the discharge point. If this information is unavailable, request that an in depth biological survey be undertaken as soon as possible to establish a “before and after” scenario of the efficacy of the new settling/filtration lagoons. To add weight to the request for this information, suggest a partnership be formed (loosely) between riparian owners (landowners), TFIA., Local Fishing Clubs, S & T Association etc., and even consider enlisting the local MP to lend his/her name to these requests, particularly if initial resistance to these requests is met.

Not being conversant with full and detailed facts regarding the volumes of annual discharge and chemical content of the effluent, I still have “an instinctive feeling” that although the settling and filtering lagoons may well reduce the damaging effects to the receiving waters, they have not sufficient capacity to reduce the effects satisfactorily at all times. The size and future management of the reed beds gives considerable cause for concern unless assurances can be given to the contrary.

2. To add weight to any biological surveys undertaken below the discharge insist also that a survey of the burn above the discharge point is undertaken for control and comparison purposes.

3. Obtain reed bed management plans along with specifications of constructions and predicted capabilities of lagoons.
4. Seek estimates for woody debris clearance and opening up and cleaning of channel between discharge point and confluence with the Tyne.



5. Consider and discuss with the EA the tree cover canopy along the reach with a view to thinning out the trees to allow more light into stream channel.

**Comments and Suggestions:**

Not until all the requested information has been collected and studied should any in stream enhancement work be contemplated, let alone implemented. The “worst case scenario” would be that the future cleaned effluent discharge quality is found to be such that fish are still unable to live satisfactorily within the contaminated reach – ie., from discharge point to main Tyne. In this instance therefore, cleaning out the woody debris and improving the habitat in this reach, may have negative results and may even discharge more contaminants into the main Tyne. Whereas, if the reach is left untouched the present state of the stream with all the woody debris in situ, may

well act as a further downstream filter and the silt impoundments may act as a containing contaminant sump.



Until it is shown conclusively that the discharge is tolerable and that it can be maintained as such, should the suggested clearance and opening up of the lower reach be considered. However, thinking positively, quotations for the work could be obtained. Given good water quality, this clearance work would significantly improve access for migratory trout and once the channel is scoured of the silt accumulations, then spawning gravel should once again appear and further habitat enhancement could then be contemplated.

The Coal Authority and its Consulting Engineers and Contractors could well be asked to contribute to this part of the project as they should be amenable to assist with the costs or, alternatively, with the supply and use of suitable machinery (HyMac and Driver). If the Coal Board are included with all the other interested parties and the principles of match funding are acceptable, their co-operation would give them excellent PR and enhance the effect of their work already undertaken at the coalmine site.

To undertake the clearance on the lower reach I would suggest an expert HyMac operator would give an accurate estimate, but in my opinion, no more than ten working days would be needed to clear the debris and tidy up.

It is recommended that consultation with the Environment Agency at the very outset is undertaken and that they be asked to advise on reducing the tree canopy cover along the lower reach. It is essential to consult with all landowners along the reach to obtain access and tree removal permission etc.

In my opinion, once the problems with the effluent discharge have been permanently resolved and the lower reach cleared and opened up to promote flows, this will scour and wash out the accumulated woody debris and silt from the burn which should then afford excellent holding and spawning habitat for migratory and resident wild brown trout. The restoration of this lower reach would then link up with the suitable spawning and juvenile habitat in the headwaters. Once achieved, the burn would then become a positive and productive asset to the whole River Tyne system.

Once this is achieved, you can change the name from Red Burn to Trout Burn!!

Therefore, it is essential to get all the answers to your requests for information. It is mandatory that all discharges are consented to a required safe standard and that the discharges are regularly monitored. All such information is in the public domain and should be readily available from the Environment Agency. Keep the pressure on until the right answers are obtained. Once a good result is obtained from this project it will then set a precedent for further problem sites within the catchment to be identified and treated as an ongoing part of the whole catchment enhancement and protection strategy. Although it may be shown that the overall effect of the discharge into the Red Burn has minimal effect on the main Tyne, using the time worn but unsustainable maxim of “the solution to pollution is dilution” it can also be shown that there can be “death by a thousand cuts” and by reducing one thousand to nine hundred and ninety nine, must be a step in the right direction and the long term objective of the Tyne Fisheries Improvement Association.

It is suggested, and experience has shown, that even more substantial support can be derived from changing the name of the Tyne Fisheries Improvement Association to The Tyne Improvement Association. The reason for this subtle change is that today and in the future, all conservation, restoration, protection and enhancement of our river systems will be viewed from the aspect of entire river catchments. Plans for the entire river catchment of the Tyne will be formulated and, most probably, are being

discussed and outlined at this moment. This being the case, fisheries will only be part of these plans. The fisheries of the Tyne system are an important integral contributor to the establishment of these plans but the future indicates that fisheries interests will not be exclusive as there are many other legitimate users of the natural elements that make up the whole aquatic eco system that is the Tyne. These users will also have their legal right to input into these plans and rather than many individuals and sundry user groups fighting solely for their own corners, bringing them together under the umbrella of "The Tyne Improvement Association" will be a major step forward. Like it, or not, anglers in the future will, in my opinion, have to work harmoniously together with the "Twitchers" "Bug Hunters" "Tree huggers" "Canoeists" and all the other legitimate users of the river system to produce together a satisfactory plan which will ensure that the future quality is maintained and improved where necessary. The principles of this philosophy are enshrined in the "Water Framework Directive" legislation which will be implemented by Government over the next few years.