HABITAT ADVISORY VISIT RIVER EBBLE, WILTSHIRE UNDERTAKEN BY VAUGHAN LEWIS, WINDRUSH AEC ON BEHALF OF LONGFORD ESTATE. MAY 2006

1.0 Introduction

This report is the output of a Wild Trout Trust Advisory visit undertaken by Vaughan Lewis, Windrush AEC to the River Ebble, Bodenham Wiltshire on 1st June 2006. The visit is part of the Trust's Cinderella Chalkstreams Project, jointly funded by English Nature and the Environment Agency.

Comments in the report are based on observations on the day of the site visit, and discussions with the Longford Estate river keeper, Peter Orchard. Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.

Longford Estate operates a syndicate fishery, with up to 100 members able to fish both the River Ebble and the main River Avon.

2.0 Habitat Assessment

The downstream limit of the reach walked was located at the A338 roadbridge. The Ebble was heavily coloured, with a milky grey diffraction colour similar to that found at times on other chalkstreams/limestone streams elsewhere in the UK.

The banks of the river were generally well vegetated, with dappled shade cast by riparian trees. There was some heavier shading in a short section of the channel further upstream.

Lower section of the river u/s of the A338 roadbridge showing shallow riffle

Instream habitat quality was generally good, with sections of deep glide, shallow glide and riffle present. Gravel quality on the riffle sections was however only moderate, with significant volumes of entrained fine sediment present amongst the poorly sorted substrate. There was abundant submerged weed in this downstream section, particularly starwort *Callitriche* Spp. and water crowfoot *Ranunculus* spp. The growth of these plants was much reduced in the more heavily shaded areas.

There was considerable grazing pressure on the banks of the whole reach of the river from agricultural stock grazing. Up to 400 dairy cows were kept in floodplain fields

at various times. Fencing along the river was intermittent in nature, with some of the fence lines erected very close to the bank top, reducing the benefits to vegetation growth from the exclusion of stock.

Overgrazed section of river bank

Some small islands had formed within the channel. These were splitting flow in the channel, creating a variety of instream habitat. Careful use could be made of faggot bundles to recreate this feature elsewhere in the river.

Midstream island

The upper section of the fishery, Homington Meadows, was again heavily stocked with cattle, leading to overgrazing, with sections of exposed chalk present and an over-wide channel.

In response to this damage, much of the reach had been fenced. Unfortunately, the fencing had been erected very close to the water edge. As a consequence, access for

angling was very restricted.

The fenced sections had a well-developed and diverse marginal flora, providing valuable erosion protection for the banks and cover for young trout.

Unfenced …..

And fenced section of Homington Meadows

Instream habitat was generally excellent, with a meandering planform and a good mix of riffles, glides and pools providing abundant habitat for all lifestages of trout and grayling.

The bed in the shallower sections throughout the reach was dominated by a mix of gravel and cobbles, with entrained sand. There was an abundant growth of water crowfoot in these sections. There was an abundance of large Woody Debris present in

this relatively unmanaged reach, aiding scouring of the bed and providing cover for trout and a range of other species.

The river remained heavily coloured in this reach, suggesting that there was no obvious point source to the turbidity affecting the river.

Fly life was still good in the Ebble, with strong hatches of upwinged flies during the fishing season.

The Estate operates a policy of mink *Mustela vison* control, with a number of individuals having been live trapped in the recent past. Despite this, no water voles *Arvicola terrestris* had been seen on the estate.

3.0 Fish stocks

The Estate controlled approximately 4 km of the River Ebble. No stocking of the river is undertaken. Moderate stocks of both brown trout and grayling were present in the river.

4.0 Recommendations

As a result of the advisory visit, a number of recommendations are made for the future management of the fishery:

- The source of the colouration should be investigated. Not only was it reducing the quality of angling on the Ebble but was also likely to be having an impact on the river's ecology. There were also concerns regarding water quality in relation to the Estate's trout farm. A detailed report undertaken by WS Atkins on behalf of the west area of Thames Region of the Environment Agency (contact Graham Scholey 01491 828346 to request a copy of the report) examined the issue of turbidity in the River Windrush, a limestone tributary of the River Thames. Utilising information gleaned from two PhD studies of the river, the report concluded that the colouration was likely to have been caused by high levels of calcium carbonate in conjunction with colloidal lias clay. It is recommended that southern region of the EA should be asked to pursue the colour issue in the Ebble as a matter of urgency.

- One very obvious source of turbidity was the unfenced and chalk lined cattle crossing near to the Memorial Garden. Discolouration from the crossing was affecting water clarity downstream adversely for at least 1km. This issue should be addressed as a matter of urgency, with a fenced, stone lined crossing constructed across the river.

Unlined chalk bedded cattle crossing

- There was significant overgrazing of much of the fishery by cattle. Where fencing had been erected it was often too close to the bank top and in many cases, had partially collapsed. In order to prevent further damage and allow regeneration of riparian vegetation, it is imperative that the banks throughout the grazed sections of the fishery are protected by the erection of fencing. Ideally, a buffer strip in excess of 3m should be created alongside the river, in order to allow vegetation growth and also to promote detention of fine sediment. Fencing of the channel would also promote the narrowing of the river, with a reduction in width of more than 1m predicted. This would increase flow velocity and encourage the sorting of the substrate, with consequent reduction in the siltation of spawning gravel. The benefits of fencing can clearly be seen at Homington Meadows, with the contrast between fenced and unfenced sections dramatic.

- A short section of the downstream reach was slightly overshaded, reducing the growth of instream plants. A careful regime of selective coppicing/pollarding could be used to partially open up the channel, and reduce shading locally. Care should be taken only to coppice/pollard small sections of the bankside trees, with more cutting undertaken in successive years. In addition to reducing shading, this will create a mosaic of uneven aged trees on the bank and dappled shade across the channel.

- Timber generated from the felling could be utilised to increase scouring and sorting of the riffle areas. Sections of trunk and larger branches could be pinned in place to form either upstream facing groynes or paired upstream facing ‘v’ groynes. Both designs speed up flow velocity locally, encouraging scouring of the bed and the creation of deeper water areas and better quality, well sorted spawning gravel. Note that in all cases, it is vital to ‘key’ the structures into the banks carefully to avoid erosion at this interface.

Upstream facing 'v' groynes

- The arisings from the tree trimming could also be used to create faggots, roughly 2m long with a diameter of approximately 300mm. Once manufactured, the faggots could be used to reform a new edge to the river in the overwide, cattle eroded sections of the river, once adequate fencing from stock has been erected. The channel could be narrowed locally by up to 2m using the faggots. They should be pinned in place using wooden stakes and backfilled with secured brashings, overtopped with cut sods of sedge *Carex* spp., reed canary grass *Phalaris arundinacea* or yellow flag *Iris pseudacorus* obtained locally. These will help to promote rapid development of a protective marginal vegetation fringe. The top of the faggots should be set at approximately 100-150mm above mean summer water level.

- Where the banks were overgrazed, there was a total absence of riparian trees. Following erection of fencing, it is recommended that small clumps of trees are planted strategically along the fishery. Suitable species include ash *Fraxinus excelsior,* hawthorn *Crateagus monogyna* and goat willow *Salix caprea.*

- A regime of cleaning spawning gravels each September could be established. This can be achieved by either manual raking, or by the use of high-pressure water

jets. Care must be taken to clean riffles rotationally, with only short sections being treated annually. It is important that the EA are contacted prior to any cleaning of gravel, due to the possible discoloration of water in the river resulting from the operation. The same concerns dictate that downstream neighbours should also be forewarned of the operation.

- Partial funding for these works may be obtainable from a variety of sources including the Wild Trout Trust (may be able to provided small sums of 'pump priming' money, the Environment Agency (who are keen to participate in 'matched funding' projects, perhaps under the Cinderella Chalkstream Project. Contact Allan Frake or Lawrence Talks via the EA national call centre 0870 8506506) and existing or new agri-environment schemes (much of the land is apparently under Countryside Stewardship). The concerns regarding water quality in the catchment, and the Avon Landcare project may help to raise the priority of any scheme proposed for the Ebble.

- Note that all works to bed or banks of the river or within 8m of its banks requires 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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