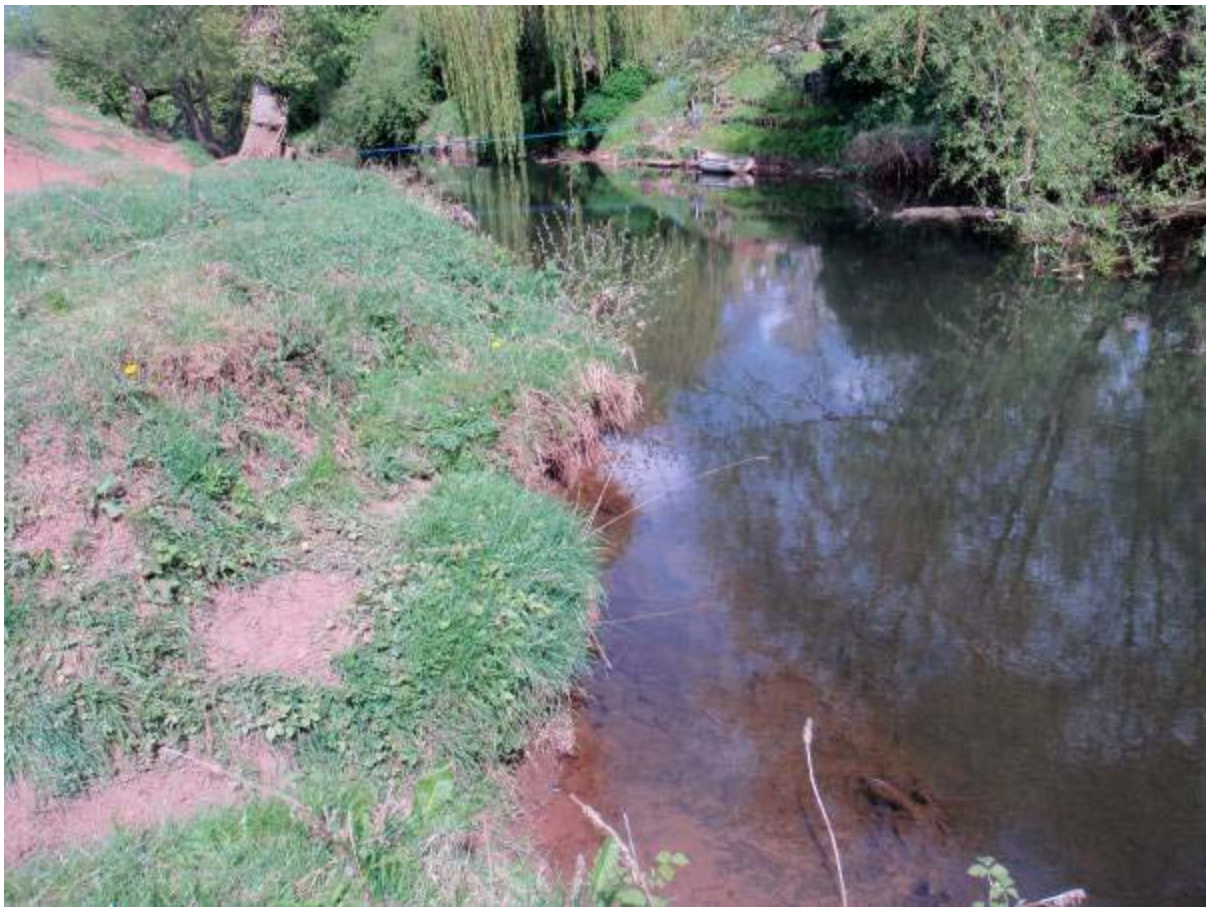
River Monnow – Monmouth & District Angling Society



An advisory visit carried out by the Wild Trout Trust – April 2011

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on a short section of the River Monnow on waters controlled by the Monmouth & District Angling Society. The advisory visit was undertaken at the request of Mr. Peter Brundret, who represents the management committee of the Angling Society. The request for advice relates to a specific area of bank erosion, which has already been the subject of considerable debate within the Angling Society, the Environment Agency and the wider local community.

Comments in this report are based on observations on the day of the site visit and discussions with Mr. Brundret. 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.

2. Catchment overview

The river rises near Craswall on Cefn Hill just below the High Black Mountains, Wales. It flows southwards, gaining the waters of its tributaries the Escley Brook and Olchon Brook near Clodock and the waters of Afon Honddu, from the Welsh side of the Black Mountains, near Pandy. The river then flows briefly eastwards before again turning southwards. At Monmouth the river joins into the River Wye with the River Trothy. Its total length is around 26 miles (42 km).

The Monnow historically supported one of the most productive and popular wild trout fisheries in the UK but the quality of the fishery has declined due to increased sediment loads entering the river. This issue has been highlighted in the Environment Agency's River Basin District Management Plan for the whole of the Wye catchment and any measures taken to address bank erosion and sediment input are likely to be encouraged and supported by the statutory authorities.

Fishery quality has picked up recently due to a number of initiatives carried out by various organisations including the Monnow Rivers Association. More information on the work of the MRA can be found at:

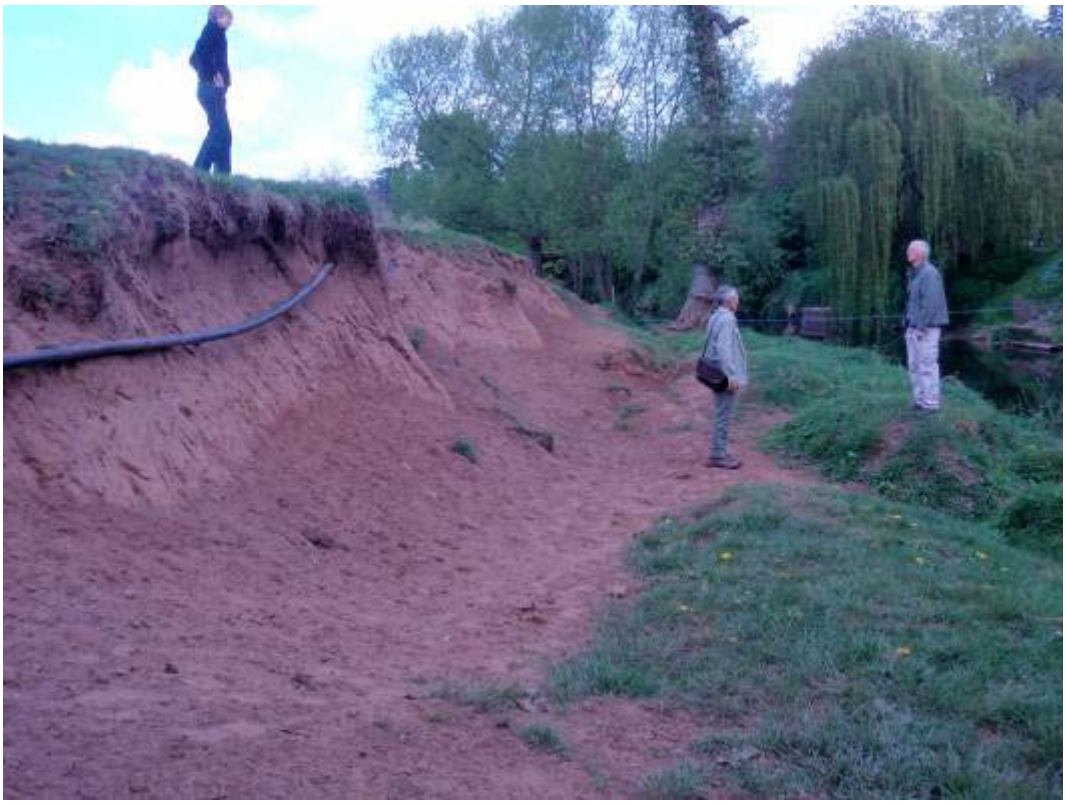
http://monnow.org/default.aspx

3. Fishery overview

The water controlled by the Monmouth & DAS is situated a short distance upstream of the Monnow's confluence with the Wye at Monmouth. The river here is managed as a mixed coarse and game fishery. Access to the fishery is via the RB flood plain with the LB running up a steep escarpment to the town of Monmouth itself. The meadows adjacent to the fishery are a honey pot site for visitors, local walkers and dog owners as well as a play area for local children.

4. River bank assessment

The section of bank causing concern is situated on Vauxhall Meadows on the inside of a sweeping bend. The length of bank which has been eroded extends to approximately 50 metres. The trigger for the initial erosion is not known but in recent years the line of the RB has been nibbled back by the river and a large gulley has been eroded, exposing the soft friable soils to further wear.

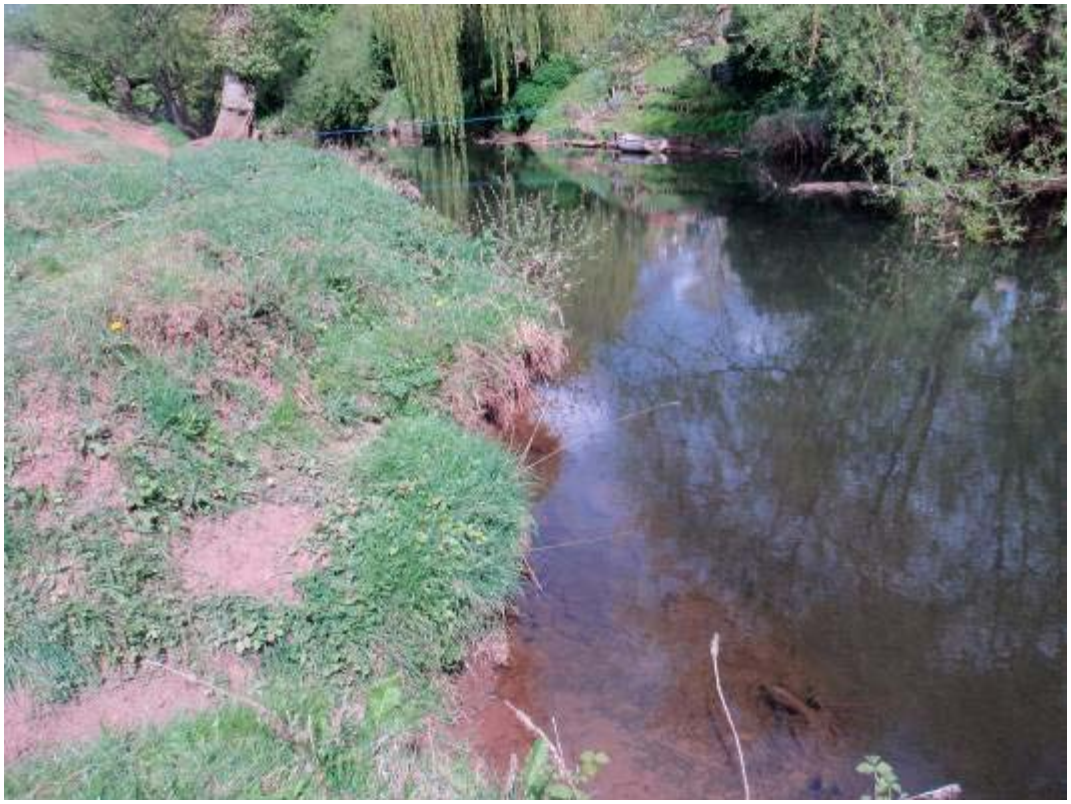


Eroded bank with exposed water pipe. Note the river bank margin appears to be relatively stable at this location.

Excessive bank erosion on the inside of bends is relatively unusual and it is thought that the construction of hard bank defences and landing stages on the LB may be contributing towards increased pressure on the vulnerable RB. During large spates the river can only spill out of the channel adjacent to the RB and flood water can sweep down on the landward side of the tree line on the straight above the bend and put huge pressure on the bank, potentially eroding the inside bend even further.

A big issue for the angling club is safe access to the water adjacent to this bank as the slopes leading down to the river are very steep and, when wet, are extremely slippery. Impacts on local river habitat at this point are considered to be negligible because the actual margin and toe of the bank are reasonably well vegetated and stable. That said, any exposed meadow or bank within the flood plain will be the source of large quantities of sediments which can be mobilised during spate conditions and which then potentially settle in the river below, smothering gravels and generally damaging the ecology of the river.

The key to resolving issues associated with heavy siltation, as highlighted in the River Wye RBDMP, will be to address issues of exposed soils vulnerable to erosion.



The toe of the bank is reasonably well vegetated and looks to be relatively stable

On the downstream apex of the bend the erosion is more problematic because it extends right down to the toe of the bank. In areas like this the bank is extremely vulnerable to further erosion causing the river to gradually become wider. It is important that the river has some wide, shallow sections of channel, which are extremely valuable habitats for juvenile fish. However, the margins are critically important and the complete lack of any vestige of cover will render this section a very poor habitat for juvenile fish.

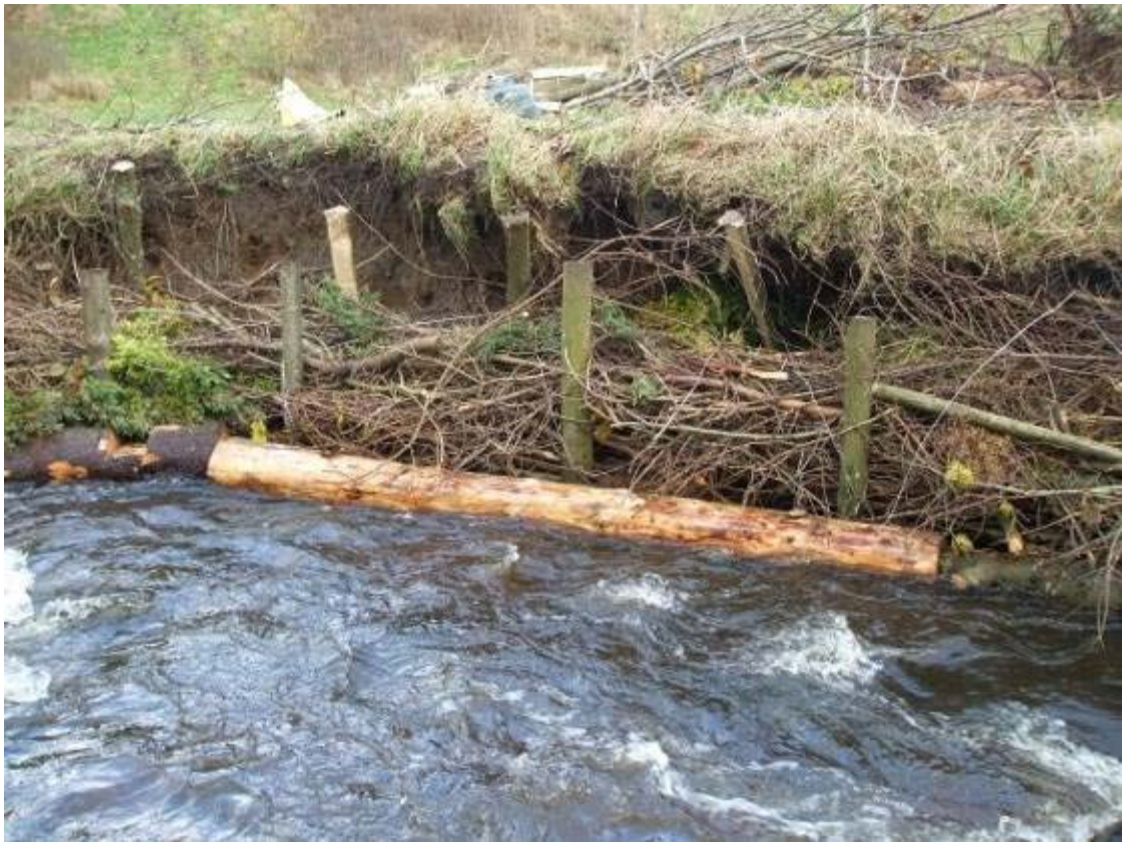
5. Conclusions and Recommendations

The excessive bank erosion on this section of the Monnow should be addressed. It would appear that the banks are particularly vulnerable to erosion pressures here due to the unfettered access for grazing animals combined with excessive surface pressure caused by human and canine footfall.

A combination of actions will need to taken to address the problem and to ensure future bank stability:

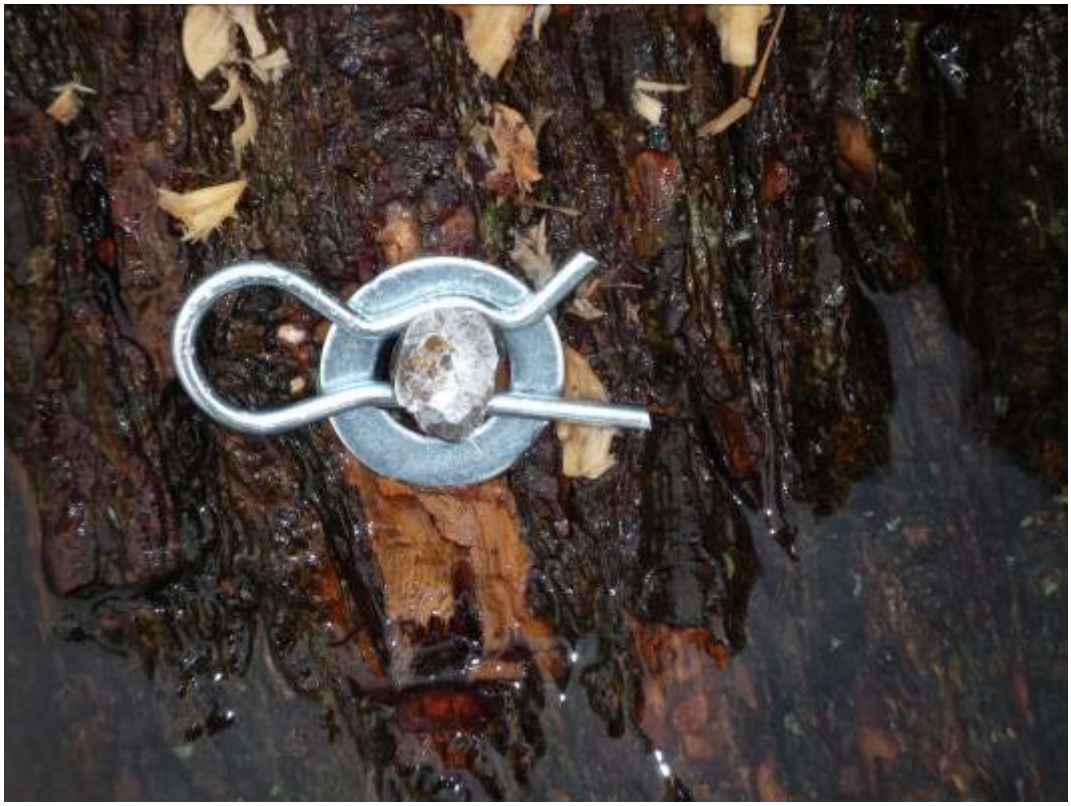
The upper section where the gulley has formed should be regraded with an excavator ideally to a batter of at least 1:3. To achieve this, the very top of the cliff will need to be excavated and the arisings placed in the depression and then the whole bank graded back to achieve the required slope. The surface must be stabilised with a biodegradable geotextile and either seeded with an appropriate approved seed mix and/or planted with plant plugs, local sods and willow whips. The whole area will then need to be fenced for at least two full growing seasons to enable the planting to become well established. Cutting the bank back and excluding grazing animals may prove to be unpopular with the land owners. However, without remedial action it is likely the gulley will get bigger and land will be permanently lost as the river creates a new course. It will also be important to exclude anglers and walkers (and their dogs) from the area until such time that the bank has fully recovered.

On the lower section where the erosion has occurred right down to toe of the bank a different solution is recommended. Here some parallel tree trunks should be pinned to form a new solid toe to the bank. This will provide an anchor for a brash mattress which should be laid up against the eroded face and either wired down to driven clefts, or secured with cross laths nailed over the top.

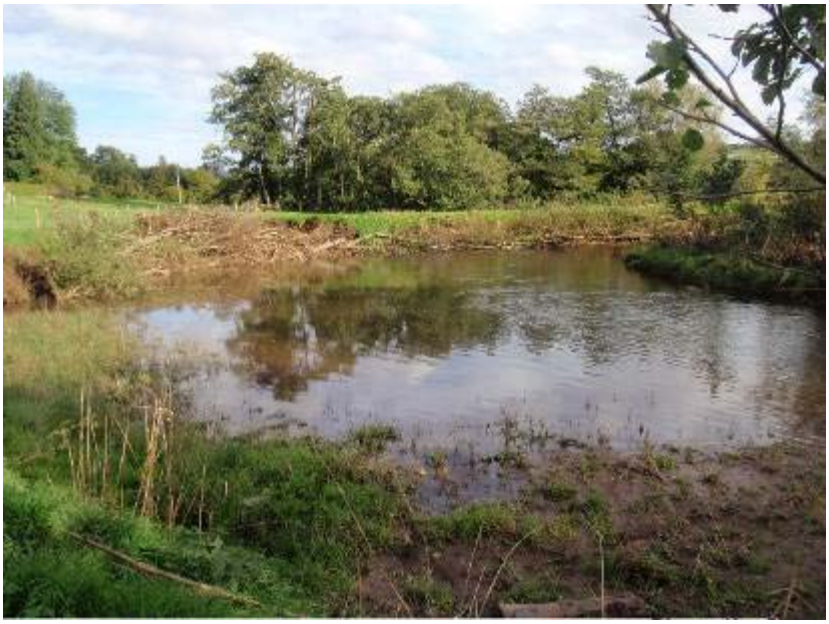


Work in progress. Tree trunk sections pinned to the toe of an eroded bank to be backfilled with wired down brash on the River Colne in Lancashire

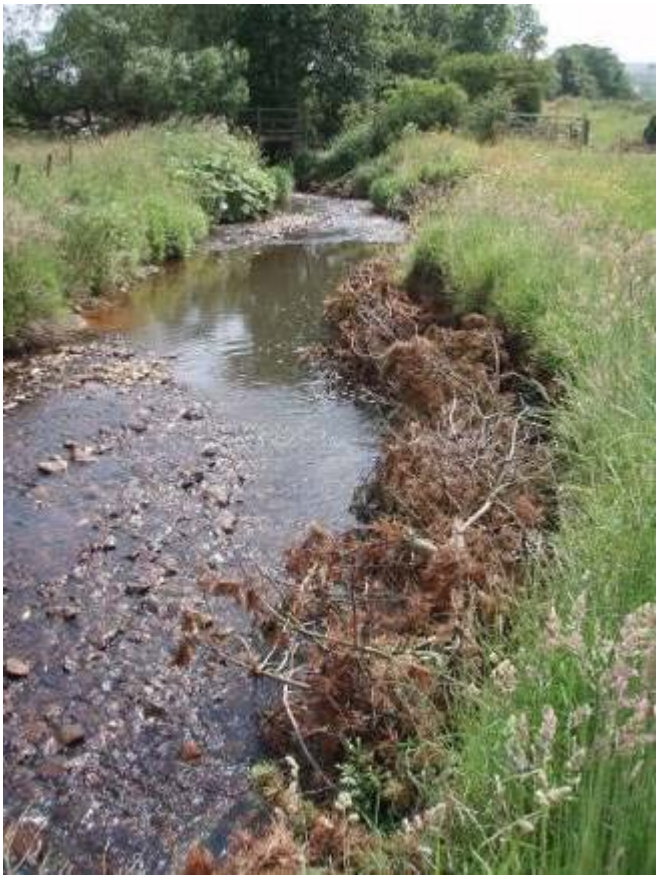
Trunks can be secured to the river bed using 2m lengths of 18 -20 mm steel re-enforcing bar at 2m centres. The trunk is pre-drilled with a wood auger and the trunk is secured in place with a large washer either pre –welded to the bar or alternatively cross pinned (see below).



Cross drilled and pin method



A large eroded bend on the Monnow at Pandy defended with “whole” tree revetment



Soft revetment using brushwood against an eroded bank on the River Manifold – this has provided excellent marginal cover for small trout as well as for riverfly species such as the southern iron blue.

The extent of the erosion on the Vauxhall Meadows will necessitate a different approach to that shown in the photos above. But, the principles will be broadly the same.

Step 1. Create and key in a new log toe which will catch any material that slumps off the face and provide a secure anchoring point for wiring down.

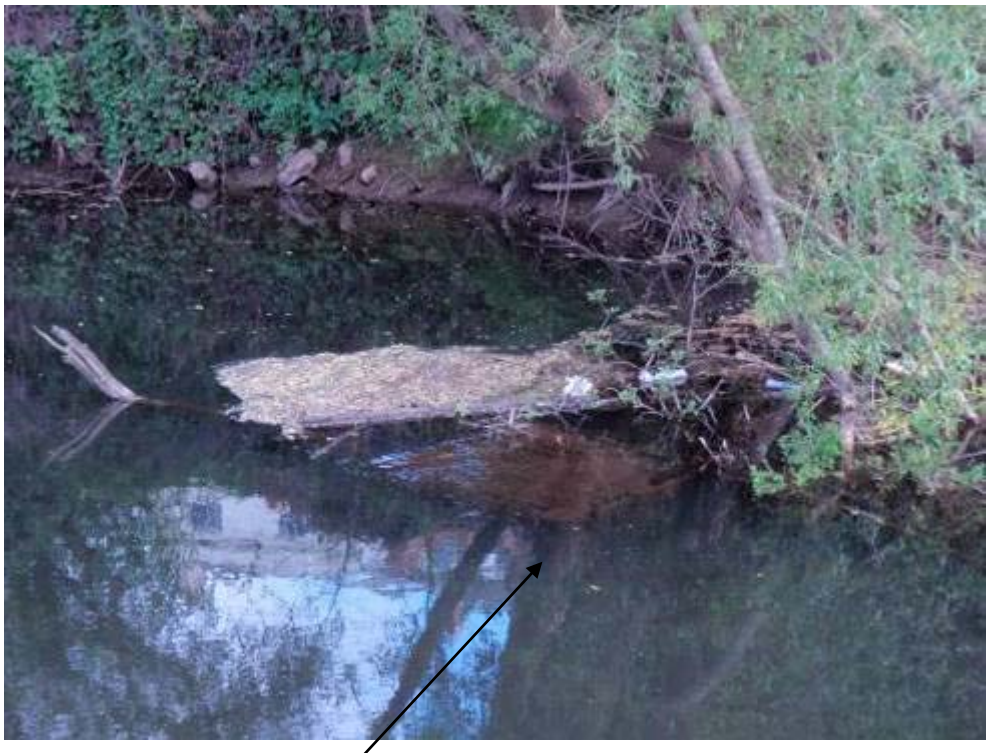
Step 2. Place and weave a thick mattress of brashings to the bare earth face to catch sediments and to slow erosive forces. Note that brashings laid on such a high bank can be laid vertically as well as horizontally. The whole structure will also provide a support matrix for live plants (such as willow whips, sods etc.).

Step 3. Drive chestnut clefts into the top of the bank for anchor points and either nail poles or laths across the brashings and/or wire down and secure with heavy duty staples.

Step 4. Push live willow whips and sods of river side turfs won locally and push into the gaps to facilitate the development of a dense root system.

Step5. Exclude live stock, anglers and the public with temporary fencing until the face has become fully vegetated.

Additional actions should include the light trimming of the marginal willow branches on the tree immediately opposite the top section of erosion and the removal of the large subsurface tank which may be acting as a flow deflector.



Removal of the large tank and debris lying at the foot of the willow may help to take some pressure of the RB margin

Much of the work to mitigate against the bank erosion is within the scope of the angling club to undertake although machine work will be required to re-profile the bank. A source of woody brashings is also required, some of which can be harvested locally via sympathetic tree works. A budget of approximately £5000 would enable the work to be carried out by contractors including materials, machine mobilisation and fencing costs.

A consultation with the land owner, the local authority and the EA is recommended and a partnership project set up to tackle the problem. Brashings can only be harvested outside of bird nesting season. A project plan to tackle the work can be formulated over the summer (with consultation) with a view to undertaking the work either in the early autumn, winter (subject to ground conditions) or ideally early spring, when a full summer's growth and reduced risk of spates could be expected.

It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. Any modifications to hard defences will require a land drainage consent on any river designated as "main river". Advice can be obtained from the EA's Development Control Officer.

Acknowledgement

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programmes.